

Adolescence, Relationships, and Psychological Health: An Attachment Perspective

Yun Lin Daphne Goh

A thesis submitted for the degree of Doctor of Philosophy of The
Australian National University

November 2013

Declaration

I declare that this work is the result of my own research, except where other work has been acknowledged. This dissertation (nor any part thereof) has not been submitted for any higher degree to any other institution or university.

Goh Yun Lin Daphne

November 2013

Acknowledgements

Firstly, I'd like to take this opportunity to express my heartfelt gratitude to my supervisor, Dr Ross Wilkinson, for all the support, guidance, and encouragement that he has offered over the years. Without his mentorship, ideas, input, and suggestions (basically everything!), this dissertation would definitely have not been possible. I would also like to thank my supervision panel, Dr Gery Karantzes and Dr Melanie Zimmer-Gembeck for their helpful insights and constructive criticisms in the production of this thesis. To my lovely colleagues, Rizal Abu Bakar, Jodie Burchell, Tamara Coupe, Tram Dinh, Debra Harris, Hong Hui-Lin, Stephen Tang, Jessica Wilson, and all those others who have gathered in Room 217 to exchange ideas, commiserate or just hang out, thank you for having assisted me in one or many ways. My family and friends back home for their constant nagging and never-ending disbelief that "I'm not done yet", especially my once-adolescent sister Elizabeth. Finally, to the long-suffering boyfriend for putting up with my lack of computer skills and who had little choice but to learn more about adolescent attachment and psychological health. You know who you are, Steven Maxwell Hawes.

Abstract

Adolescence is a rapidly changing relational and emotional landscape where the foundations for future healthy adjustment are established. The importance of interpersonal relationships for promoting positive development during adolescence has seen adolescent developmental processes increasingly re-conceptualized in relational terms. Attachment theory proposes that emotional and psychological wellbeing are intimately linked with attachment figures that provide support and security, and provides an ideal framework from which to explore the influences of interpersonal relationships on the normative developmental processes in adolescence. However, the relative importance of interpersonal relationships for adolescent psychological health has seldom been investigated collectively as an attachment network. Thus, the aims of the present dissertation were to examine developmental differences in the utility of attachment figures in a sample of early and late Australian adolescents, to investigate the changes that occur to these adolescent attachment relationships over twelve months, and to investigate the influence of these relationships for adolescent adjustment.

High school students ($N = 522$) from the Australian Capital Territory (ACT) participated in the initial study examining developmental differences in attachment reorganization and the effects of attachment figures on psychological health. Cross-sectional results demonstrated that adolescents differentially used attachment figures for various needs depending on their age, gender, romantic status, and attachment expectancies. Romantic partners were incorporated into attachment networks rather than supplanting existing network members. Higher attachment strength reported to attachment figures did not necessarily indicate greater influence on adolescent wellbeing, with the influences of attachment figures more nuanced and moderated by

age and choice of attachment target. Global, dimensional attachment expectancies (Anxiety and Avoidance) were most indicative of adolescent adjustment.

Although attachment theory proposes a movement of attachment functions from parents to peers with increasing age (Hazan & Zeifman, 1994), attachment relationships were not found to evolve consistently over twelve months for a subsample of adolescents ($n = 156$) who re-participated in the longitudinal study. A significant minority reverted back to mothers from friends and romantic partners for attachment needs even though normative trends to specific attachment figures were demonstrated longitudinally. The normative reorganization of attachment needs was not shown to influence adolescent wellbeing longitudinally with one exception. Older adolescents with pre-existing positive school attitudes and who had reoriented towards their peers reported increased positive attitudes towards the school environment. Similar to the cross-sectional analysis, attachment expectancies were more predictive of adolescent adjustment. Although suggesting that changes in attachment relationships have few implications for psychological health, the relative volatility in attachment relationships apparent during adolescence may instead be reflective of other behavioral systems such as the affiliative, sexual or exploratory systems. These findings highlight the methodological limitations present in current measures of attachment strength and need for markers exclusive to adolescent attachment. Attachment formation in adolescence appears unique compared with infancy or adulthood, and has implications for the application of attachment theory towards understanding the normative development of interpersonal relationships during adolescence. The importance of accounting for both normative changes in attachment relationships and individual differences in attachment expectancies when predicting adolescent adjustment is also discussed.

Table Of Contents

Declarations	ii
Acknowledgements	iii
Abstract	iv
CHAPTER 1: <i>Adolescence</i>	
1.1 Introduction	1
1.2 Definition of Adolescence	2
1.3 Developmental Changes in Adolescence	4
1.3.1 Pubertal Maturity	5
1.3.2 Cognitive Advancements	7
1.3.3 Psychological Development	8
1.3.4 Interpersonal Relationships	10
1.4 Research on Adolescent Development	15
1.5 Conclusion	17
CHAPTER 2: <i>Adolescent Adjustment and Interpersonal Relationships</i>	
2.1 Introduction	20
2.2 Adolescent Psychological Health	21
2.3 Interpersonal Relationships	24
2.3.1 Parent-Adolescent Relationships	24
2.3.2 Peer Relationships	27
2.4 Conclusion	34
CHAPTER 3: <i>Attachment Theory</i>	
3.1 Introduction	36
3.2 Overview of Attachment Theory	37
3.2.1 The Attachment-Behavioral System	37
3.2.2 Attachment Behaviors or Functions	38
3.2.3 Attachment Bonds	39
3.2.4 Monotropy and the Hierarchy of Caregivers	41
3.2.5 Attachment Reorganization	42
3.2.6 Attachment Working Models	42

3.3	Individual Differences in Infant Attachment	44
3.4	Attachment Beyond Infancy	46
3.4.1	Individual Differences in Adult Attachment	46
3.4.2	Individual Differences in “Attachment States of Mind”	47
3.4.3	Individual Differences in Attachment Styles or Categories	49
3.4.4	Individual Differences in Attachment Dimensions	52
3.4.5	Summary of Individual Differences in Adult Attachment	54
3.4.6	Normative Development of Attachment in Adulthood	55
3.4.7	Summary of Advances in Normative Attachment in Adulthood	59
3.5	Conclusion	59

CHAPTER 4: *The Measurement of Adolescent Attachment*

4.1	Introduction	61
4.2	Attachment Working Models and Subsequent Development	62
4.3	Individual Differences in Attachment Models and Adolescent Adjustment	64
4.3.1	General Attachment Models and Adolescent Adjustment	64
4.3.2	Attachment Models of Parents and Adolescent Adjustment	65
4.3.3	Attachment Models of Peers and Adolescent Adjustment	66
4.3.4	Summary of Individual Differences in Attachment Models and Adolescent Adjustment	67
4.3.5	Criticisms of Traditional Methods for Assessing Attachment Models	68
4.4	The Challenge of Measuring Adolescent Attachment	70
4.4.1	Attachment Reorganization in Adolescence	70
4.4.2	Gender Differences in Adolescence	71
4.4.3	Quality of Attachment in Adolescence	72
4.5	The Quality of Attachment Relationships and Adolescent Adjustment	73
4.5.1	The Inventory of Parent and Peer Attachment	73
4.5.2	Parental and Peer Influences on Adolescent Adjustment	74
4.5.3	Criticisms of the IPPA	75
4.6	Conclusion	81

CHAPTER 5: *Adolescent Attachment Networks*

5.1	Introduction	84
-----	--------------	----

5.2	Attachment Reorganization During Adolescence	85
5.2.1	Structural and Compositional Changes in Attachment Relationships	85
5.2.2	Hazan and Zeifman's (1994) Seminal Study of Attachment Reorganization	86
5.2.3	Individual Differences in Attachment Models and Attachment Reorganization	89
5.2.4	Age, Sex, and Romantic Status Differences in Attachment Reorganization	91
5.2.5	Summary of Advances in Attachment Reorganization during Adolescence	94
5.3	The Present Study	95
5.3.1	Overview	95
5.3.2	Objective One: Attachment Reorganization in Cross-section	96
5.3.3	Objective Two: Attachment Reorganization Over Time	102
5.3.4	Objective Three: Attachment Reorganization and Adolescent Adjustment	104
5.4	Conclusion	114
CHAPTER 6: <i>Cross-sectional Study: Attachment Reorganization</i>		
6.1	The Present Study	116
6.1.1	Objective One: Attachment Reorganization in Adolescence	117
6.2	Method	122
6.2.1	Participants	122
6.2.2	Procedure	123
6.2.3	Measures	124
6.3	Results	131
6.3.1	Overview	131
6.3.2	Demographic Information	131
6.3.3	Preliminary Checks	133
6.3.4	Attachment Network Composition	134
6.3.5	Attachment Functions: Overview	135
6.4	Discussion	191
6.4.1	Overview	191
6.4.2	Limitations and Future Directions	220

6.4.3	Conclusion	222
-------	------------	-----

CHAPTER 7: *Cross-sectional Study: Adolescent Adjustment*

7.1	Objective Two: Attachment Reorganization and Adolescent Adjustment	225
7.1.1	Attachment Relationships	227
7.1.2	Age Differences	227
7.1.3	Gender Differences	227
7.1.4	Individual Differences in Attachment Models	228
7.2	Method	228
7.3	Results	229
7.3.1	Overview	229
7.3.2	Adolescent Adjustment Descriptive Statistics	229
7.3.3	Intercorrelations between Demographics, Attachment Variables, and Adolescent Adjustment	236
7.3.4	Attachment Variables and Adolescent Adjustment	242
7.4	Discussion	261
7.4.1	Overview	261
7.4.2	Attachment Relationships	262
7.4.3	Age Differences	265
7.4.4	Gender Differences	270
7.4.5	Individual Differences in Attachment Models	274
7.4.6	Limitations and Future Directions	278
7.4.7	Conclusions	279

CHAPTER 8: *Longitudinal Study: Attachment Reorganization and Adolescent Adjustment*

8.1	The Present Study	281
8.1.1	Objective Three: Changes in Attachment Reorganization during Adolescence	282
8.1.2	Developmental Changes in Adolescent Attachment Relationships	283
8.1.3	Premises of Change	284
8.1.4	Conceptualizations of Change: A Review	285
8.1.5	Conceptualizations of Change in the Present Study	294

8.1.6	Apriori Hypotheses	296
8.1.7	Attachment Reorganization Over Time	300
8.1.8	Objective Four: Associations between Changes in Attachment and Adolescent Adjustment	302
8.2	Method	305
8.2.1	Participants	305
8.2.2	Procedure	306
8.2.3	Measures	308
8.3	Results	310
8.3.1	Overview	310
8.3.2	Demographic Information	310
8.3.3	Preliminary Checks	314
8.3.4	Attachment Network Composition in Wave 2	316
8.3.5	Attachment Functions in Wave 2: Overview	321
8.3.6	Adolescent Adjustment Descriptive Statistics in Wave 2	335
8.3.7	Intercorrelations between Demographics, Attachment Variables, and Adolescent Adjustment (Wave 1 and Wave 2)	341
8.3.8	Changes in Attachment Variables and Adolescent Adjustment	345
8.4	Discussion	354
8.4.1	Overview	354
8.4.2	Longitudinal Changes in Attachment Reorganization during Adolescence	355
8.4.3	Longitudinal Associations between Changes in Attachment and Adolescent Adjustment	365
8.4.4	Limitations and Future Directions	370
8.5	Conclusion	372
 CHAPTER 9: <i>General Discussion</i>		
9.1	Introduction	374
9.2	Summary of Research Findings	375
9.2.1	The Adolescent Attachment Network in Cross-section	376
9.2.2	The Adolescent Attachment Network Over Time	378
9.2.3	Adolescent Attachment Network and Psychological Health	380
9.3	Broader Research Implications	382
9.3.1	Expansion, Not at the Expense of Existing Relationships	382

9.3.2	Experimentation with Peer Relationships	386
9.3.3	Effects of Evolving Interpersonal Relationships on Adolescent Adjustment	390
9.4	Limitations	396
9.5	Future Research	400
9.6	Adolescent Attachment and Social Media	401
9.7	Clinical Implications	403
9.8	Conclusion	404
	REFERENCES	409
	APPENDICES	506

CHAPTER 1

Adolescence

1.1 Introduction

Adolescence is a developmental period between childhood and adulthood characterized by profound biological, cognitive, and psychological changes in an evolving social environment (Sarandrea, 2005). Encompassing more changes than any other stages of life except infancy (Feldman & Elliot, 1990; Lerner, Villarruel, & Castellino, 1999), adolescence is also a period of increased vulnerability to experiencing declines in psychological health (Steinberg, 2005; Weller & Weller, 2000). The present generation of individuals aged between 10 and 24 years is the largest in history comprising a quarter of the world's population, yet the health of adolescents has improved only marginally in the last 50 years (Sawyer et al., 2012). There has historically been relative neglect researching psychological and physical health intervention and outcomes during adolescence (Dehne & Riedner, 2001; Williams, Holmbeck, & Greenley, 2002), thus it is imperative that research be conducted on understanding factors that promote positive adjustment to stem the growing malaise affecting today's youth (Clark et al., 2006; Collishaw, Maughan, Natarajan, & Pickles, 2010).

Whereas adolescence was previously described as a period of inevitable storm and stress (Hall, 1904), scientific research has now refuted the claims of "normative disturbances" in adolescence (Steinberg & Morris, 2001), with mounting evidence that the majority of adolescents traverse the challenges of this period to become well-adjusted and fully functioning adults (Griffin, Botvin, Scheier, Epstein, & Doyle, 2002). Interpersonal relationships are fundamental for navigating the challenges of adolescence

with relationship experiences central to normative developmental processes (Collins, 1997; Laursen & Mooney, 2008). Parent and peer relationships are key resources for adolescents' psychosocial functioning and their successful transition to adulthood, fostering psychosocial growth and providing support and a sense of belonging even while adolescents strive to establish autonomy (Boutelle, Eisenberg, Gregory, & Neumark-Sztainer, 2009; Hall-Lande, Eisenberg, Christenson, & Neumark-Sztainer, 2007). As such, optimal adolescent adjustment is suggested to occur when autonomy is successfully established under conditions of relatedness (Collins & Steinberg, 2006; Williams, 2003).

This dissertation examines the associations between interpersonal relationships and psychological wellbeing in an adolescent population. An introduction to adolescence and the biological, cognitive, psychological and interpersonal changes that happen during this significant period is provided in this chapter. Given that many developmental transitions have transpired in the century since the advent of modern research on adolescent development (Petersen, 1988; Steinberg & Lerner, 2004), the empirical research on the psychology of adolescence will also be reviewed briefly.

1.2 Definition of Adolescence

Adolescence derives from the Latin verb *adolescere*, which means to grow up, or to grow into maturity (Feixa, 2011). First debuted in the 15th century (Lerner & Steinberg, 2004), this term succinctly describes the period of life where the biological, social, cognitive, and psychological characteristics of an individual evolve from being child-like to adult-like as defined by societal standards (Dehne & Riedner, 2001; Lerner & Spanier, 1980). Defined in reference to the second decade of life, adolescence can be parsed into three developmental phases of early (10 to 14 years), middle (15 to 17

years), and late (18 to early 20s) adolescence (Short & Rosenthal, 2008). These divisions correspond to how society organizes young people in educational settings, and in contemporary US society denotes the transition into middle or junior school, high school, and college respectively (Steinberg, 1996). Placed in an Australian context, adolescence is partitioned into early (12 to 14 years), middle (14 to 16 years) and late (16 to 18 years) and corresponds accordingly to junior high school, middle high school, and senior high school respectively (ACT Education and Training Directorate, 2013).

Milestones mark each of these developmental phases of adolescence. Early adolescence is characterized by pubertal development whilst middle adolescence sees an increase in peer orientation and a corresponding increase in freedom of activity and independence (Dashiff, 2001). Late adolescence heralds the transition to adult roles in work and relationships (Short & Rosenthal, 2008). Whilst chronological age provides the most convenient marker of developmental changes, age alone is an imperfect indicator of development and does not appropriately index many developmental phenomena even within each phase of adolescence (Dashiff, 2001; Short & Rosenthal, 2008). It is more accurate to say that adolescence begins with puberty and ends with society (Dahl, 2004; Spear, 2000). Individuals are initiated into adolescence with the dramatic biological changes of puberty and a change in school setting (Eccles et al., 1993; Shirtcliff, Dahl, & Pollak, 2009), while the transition to adulthood tends to be sociologically-commissioned and defined in terms of completion of education, entry into the workforce, and marriage and family formation (Smetana, Campione-Barr, & Metzger, 2006).

Adolescent development constitutes a dynamic interaction of individual and environmental characteristics as adolescents progressively resolve psychological, social, biological, and environmental tasks (Compas, Hinden, & Gerhardt, 1995; Eshbaugh, 2008). Individual idiosyncrasies in adolescent development which integrate biological,

cognitive, psychological, and sociocultural factors mean that no single influence acts alone or as the sole provider of change (Brooks-Gunn & Petersen, 1983; Lerner, 1995; Lerner & Galambos, 1998). Ecological and transactional perspectives on adolescent development highlight the need to examine the interrelated and multiple interactions among different contexts of development, with particular emphasis placed on the importance of reciprocal interactions between individuals and their social environments for successful adjustment (O'Connor et al., 2010; Smetana et al., 2006). Variability within and between individuals, though normative, can further complicate the profile of adolescent development, with these continually changing relations constituting the fundamental process of development (Lerner & Galambos, 1998).

The amount and degree of transition experienced by today's adolescents are greater than before given significant changes at the individual and societal levels in recent years (Bayer, Gilma, Tsui, & Hindi, 2010). An earlier onset of puberty, prolonged education, postponed entry into employment, and the rising age of first marriage and child-bearing comprise the significant changes at the individual level with further changes in the broader environment due to globalization and urbanization (Bayer et al., 2010; Caldwell, Caldwell, Caldwell, & Pieris, 1998). Given that age-graded timetables usually exist for many developmental tasks (Neugarten & Neugarten, 1996), the modern lengthening of adolescence highlights both the variability and plasticity of adolescence and the extent to which adolescence is defined less by chronological age and biological maturity than by society (Dashiff, 2001; Feixa, 2011).

1.3 Developmental Changes in Adolescence

Adolescents experience a multitude of changes beginning with the advent of puberty. Although these challenges are negotiated with varying amounts of success, most

adolescents make adaptive decisions that enable them to set and achieve useful social and personal goals (Griffin et al., 2002). The ability to continually and flexibly navigate changes and transitions as they occur is necessary for the developmental process in adolescence, with the resolution of these challenges influential for subsequent development (Linden-Andersen, Markiewicz, & Doyle, 2009; Buist, Dekovic, Meeus, & Van Aken, 2004a).

1.3.1 Pubertal Maturity

Puberty derives from the Latin word *pubertas* meaning “the virile age” and references the period where an individual first becomes capable of sexual reproduction (Feixa, 2011). Puberty is considered a universal characteristic of adolescence and comprises the greatest growth and sexual development in postnatal life (Susman & Rogol, 2004). It is not a single process or event but rather a continuum of development that commenced prenatally, and results from a series of interconnected neuroendocrine changes which culminate in adult reproductive capabilities and adult features (Archibald, Graber, & Brooks-Gunn, 2003; Dorn & Biro, 2011).

Normative pubertal development traditionally commences at the ages of 8 years in girls and 9 years in boys but can occur as late as 13 years and 13.5 years for girls and boys respectively (Steinberg, 1996, Susman & Rogol, 2004). The speed of pubertal change averages four years and approximates between 1.5 to 6 years (Petersen & Leffert, 1995). Internal and external changes exhibited during puberty can be classified into six major categories: (1) rapid acceleration followed by deceleration of skeletal growth or “growth spurt”, bringing about dramatic increases in height and weight, (2) development of primary sexual characteristics resulting in further development of the gonads, or sex glands, (3) development of secondary sex characteristics and

reproductive organs, involving changes in the genitals and breasts, and the growth of pubis, facial and body hair, (4) increase in, and/or redistribution of body fat composition and muscle tissues which give males and females their distinctive body shapes, (5) changes in the circulatory and respiratory systems leading to increased strength and tolerance, and (6) changes in both hormonal and endocrinal systems that regulate and coordinate the other pubertal events (Marshall, 1978; Marshall & Tanner, 1974).

Hormonal changes generally precede the first manifestations of physical changes by several years with the reactivation of the endocrine system that secretes both gonadal and adrenal hormones (Dorn & Biro, 2011; Negriff & Susman, 2011).

Both pubertal status (the individual's degree of physical maturation or development) and pubertal timing (the timing of pubertal changes relative to same-age peers) have been implicated in adolescent psychological health (e.g., Compain, Gowen, & Hayward, 2004; Ge, Brody, Conger, & Simons, 2006; Natsuaki, Klimes-Dougan, Ge, Shirtclif, Hastings & Zahn-Waxler, 2009). The effects of pubertal status can be direct or mediated by the responses of the adolescent and others in the social environment to the overt physical changes perceived (Marceau, Neiderhiser, Lichtenstein, & Reiss, 2012; Negriff & Susman, 2011). Although pubertal timing can have direct biological effects, most effects apparently are the result of deviations in timing from that socially predictable and culturally acceptable amongst one's peers (Ge et al., 2003; Lynne, Graber, Nichols, Brooks-Gunn, & Botvin, 2007). Adolescents' responses to the physical changes are purportedly more important for psychosocial adjustment than the physical changes per se (Laitinen-Krispijn, Van der Ende, Hazebroek-Kampschreur, & Verhulst, 1999; Marceau et al., 2012). Adolescents are acutely aware of their changing selves, with pubertal development also bringing about differences in responses from parents and extrafamilial others (Forbes & Dahl, 2010; Summers-Effler, 2004).

1.3.2 Cognitive Advancements

Cognition refers to the aspects of the mind involved in the acquisition, modification, and manipulation of knowledge in specific contexts (Bjorklund, 1999). Adolescence is a period of significant cognitive advancements involving the emergence of increasingly elaborate cognitive abilities (Crone, 2009; Luna & Sweeney, 2001) and progressively greater efficiency of cognitive control capacities (Casey, Jones, & Somerville, 2011). It is also a period of development in social cognition and affect (Crone, 2009) characterized by dramatic changes in identity, self-consciousness and cognitive flexibility (Rutter & Rutter, 1993) as adolescents become increasingly self-aware and self-reflective (Blakemore & Choudhury, 2006).

According to Keating (1990), the advances made in cognition can be categorized into five categories: (1) advancement of the ability to hypothesize beyond the real and concrete, (2) development of formal operative thinking including abstract logical reasoning abilities, (3) development of metacognition or the ability to think about thinking, (4) increase in the ability to think in multi-dimensions and to hold several different perspectives simultaneously rather than being limited to a single issue, and (5) development of the ability to see things in relative rather than absolute terms. Cognitive advances are not all made simultaneously but instead incrementally throughout adolescence as improvements continue in many aspects of executive functioning, emotional regulation, and coordination of affect and cognition (Keating, 2004; Sowell, Thompson, Leonard, Welcome, Kan, & Toga, 2004; Steinberg, 2009). These changes are suggested to occur later for boys than girls due to their later onset of puberty (Graber & Petersen, 1991).

Despite the many advantages conferred by increased cognitive sophistication, adolescence is also a period of heightened vulnerability and adjustment due to the

differing rates of maturation between the developing brain, behavioral and cognitive systems which give rise to greater risk-taking, novelty and sensation-seeking, and sensitivity to social influences (Paus, Keshavan, & Giedd, 2008; Steinberg, 2005; Sturman & Moghaddam, 2011). On the one hand, cognitive advancements allow adolescents to begin the process of establishing autonomy and individuation from their parents (Grotevant & Cooper, 1986; Steinberg & Silk, 2002). Cognitive maturity facilitates identity formation with adolescents cultivating more abstract characterizations of themselves, and the self-concepts developed becoming more differentiated and well-organized (Steinberg & Morris, 2001). An increase in social cognition enables adolescents to partake in social perspective-taking, form impressions, and reason about morality and social conventions (Steinberg, 2005).

On the other hand, advances in cognition can lead to risk-taking behaviors with adolescents evaluating the possible consequences of their actions dissimilarly from adults especially when decisions are influenced by emotional and social variables (Casey et al., 2011; Steinberg, 2009; Sturman & Moghaddam, 2011). Atypical developmental or difficulties in coordinating brain processes also leave adolescents vulnerable to the onset of a variety of emotional and behavioral problems including depression, schizophrenia, delinquency and substance abuse (Luna & Sweeney, 2001; Paus et al., 2008; Sisk & Zehr, 2005).

1.3.3 Psychological Development

One of the crucial milestones in adolescent psychological development is the formation of an integrated and personalized sense of identity (Erikson, 1968). With the onset of puberty and advances in cognition, adolescents seek to make meaning of themselves and how they fit in their broader evolving environments (Finkenauer,

Engels, Meeus, & Oosterwegel, 2002; Morgan & Korobov, 2012). According to Erikson, identity formation involves adolescents actively searching for their role, contemplating personal strengths and weaknesses, and integrating past, present, and future life experiences (Waterman, 1988). As part of constructing their own identities, adolescents continually seek out information about themselves from others and evolve from accepting parents' views to exploring and comparing their views with peers before eventually determining their own views of the self and committing to a set of core values and identity features (Llyod, 2002).

Identity formation during adolescence is characterized by the utility of increasingly complex and abstract descriptions of the self, with adolescents progressively adept at organizing different aspects of the self into a coherent whole (Harter, 1990; Moretti & Higgins, 1999). Evaluations of the self are conducted both globally and along several distinct dimensions, with adolescents viewing themselves differently across contexts and in various interpersonal relationships (Moretti & Holland, 2003; Steinberg, 1996). Adolescents begin to form an independent sense of the self and develop a greater capacity for autonomous decision-making as they become more resilient to peer influences (Steinberg, 2009). As such, a better developed identity structure results in an internal sense of continuity across time and life domains, with awareness of personal strengths and weaknesses facilitating psychological wellbeing (Luyckx, Vansteenkiste, Goossens, & Duriez, 2009; Syed & Seiffge-Krenke, 2013). By contrast, less developed identity structures leave adolescents confused and vulnerable to psychological maladjustment (Luyckx et al., 2009).

Although Erikson postulated that individuals continue to refine their views of self beyond adolescence (Hoare, 2013), research has underscored the importance of structured and time-limited self-exploration followed by an eventual formed identity during adolescence (Schwartz, Cote, & Arnett, 2005; Nelson & Nelson, 2010). The

success or failure of negotiating future life stages such as developing intimate relationships, fulfilling career objectives, and contributing to society are generally contingent on the formation of identity during adolescence (Llyod, 2002). Adolescents high in identity achievement demonstrate the best psychological, cognitive, and social functioning (Kroger, 2003). Alternatively, the lack of or confusion in identity exploration, and subsequent difficulties in forming a clear sense of identity has been linked to internalizing behaviors (Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008). Adolescents may also engage in some health risk behaviors associated with adult status (e.g., smoking, sexual activities) in their attempts to “act grown up” (Moffit, 1993).

1.3.4 Interpersonal Relationships

Adolescence is a time of changing interpersonal relationships (Kenny, Dooley, & Fitzgerald, 2013). The social world of adolescents comprises numerous different relationships that are consistently being restructured and reorganized throughout adolescence (Macek & Jezek, 2007; Helsen, Vollebergh, & Meeus, 2000). Adolescent-parent relationships change from hierarchical to egalitarian and roles are re-negotiated relative to the adolescent’s growing autonomy (Bulanda & Majumdar, 2009; Youniss & Smollar, 1985). Both the number and quality of peer relationships increase during adolescence, with the structure of peer relationships growing more complex and layered (Brown, 2004; De Goede, Branje, & Meeus, 2009a). Closer and more intimate dyadic relationships are formed with same-age peers resulting in the establishment of best friendships or the development of romantic relationships (Collins & Madsen, 2006). One of the many developmental tasks in adolescence, therefore, is to develop the capacity for mature intimacy in peer relationships while simultaneously maintaining

close and autonomous relationships with parents (Scharf, Maysseless, & Kivenson-Baron, 2004).

1.3.4.1 Parent-Adolescent Relationships

Adolescence brings about significant transformations in the relationship with parents as individuals begin to develop autonomy from their families (Kenny et al., 2013; Seiffge-Krenke, Overbeek, & Vermulst, 2010). There is a decline in the warmth and cohesion of the adolescent-parent relationship, with adolescents reporting a corresponding decrease in feelings of support, closeness, and intimacy (Conger & Ge, 1999; McGue, Elkins, Walden, & Iacono, 2005; Seiffge-Krenke, 1999). Adolescents spend progressively less time with parents and family and more time with friends (Helsen et al., 2000; McElhaney, Allen, Stephenson, & Hare, 2009). A decline in shared activities and the extent of physical affection between adolescents and parents (Conger & Ge, 1999; Hartup & Laursen, 1991) is accompanied by adolescents' request for greater privacy (Steinberg & Silk, 2002) and reduced self-disclosure to parents (Keijsers, Frijns, Branje, & Meeus, 2009). Greater negative affect towards parents is also reported with the amount of conflict, especially with mothers, increasing during early adolescence (Collins & Laursen, 2004; Kim, Conger, & Lorenz, 2001).

Conflict and disagreements over everyday issues is considered normative, and a functional and temporary hurdle necessary for transforming the dynamics of the adolescent-parent relationship (Santrock, 2003; Smetana et al., 2006). Specifically, conflicts with parents provide adolescents with opportunities to practice conflict management, self-assertion and negotiation skills (Scharf & Maysseless, 2007). It allows adolescents to renegotiate their roles in the family in addition to aligning expectations and facilitating communication among family members (Collins, 1995; Collins,

Laursen, Mortensen, Luebker, & Ferreira, 1997). In general, conflicts do not influence the subsequent quality of relationships with parents, and most adolescents still report warm and close relationships with their parents (Smetana, Metzger, & Campione-Barr, 2004). Over time, adolescents gain more autonomy and become more independent from their parents (Zimmer-Gembeck & Collins, 2003), resulting in a more reciprocal and egalitarian relationship between parent and adolescent (De Goede, Branje, & Meeus, 2009b; Russell, Pettit, & Mize, 1998).

1.3.4.2 Peer Relationships

Peer relationships increase substantially in importance during adolescence, with the structure of peer relationships more elaborate than at any earlier time (Padilla-Walker & Bean, 2009). Friendships and peer groups are a fundamental developmental context for adolescents (Furrer, 2010) where desires for closeness and influence among peers increase (Ojanen, Gronroos, & Salmivalli, 2005) and making friends becomes a central activity for personal development (Aboud & Mendelson, 1996; Marsh, Allen, Ho, Porter, & McFarland, 2006). Adolescents spend increasing amounts of time with peers whereby heightened importance is placed on these relationships and on gaining acceptance from their peer group (Steinberg & Morris, 2001). Most adolescents have a best friend, several close friends, and a friendship group that comprises all or some of their close friends (Degirmencioglu, Urberg, Tolson, & Richard, 1998).

Friendship networks enable adolescents to build their unique identity and serve as a reliable alliance providing emotional support and a safe environment for self-exploration and identity formation (Collins & Steinberg, 2006; Erdley, Nangle, Newman, & Carpenter, 2001; Savin-Williams & Berndt, 1990). They provide a context for acquiring social skills, serve as information sources for knowledge about self and

others, and are emotional and cognitive resources for everyday problem-solving (Bowker, 2004; Hartup, 2001). Furthermore, peer relationships contribute to the subsequent formation of adolescent romantic relationships by providing a base for exploration and through refining the socio-emotional capacities required for romantic intimacy (Collins, Welsh, & Furman, 2009; Connolly, Furman, & Konarski, 2000; Scharf & Mayseless, 2001).

Although adolescents are influenced by their multiple friendships, they also actively participate in shaping and co-creating the context or climate that characterizes these ongoing relationships (Furrer, 2010). Adolescents experience friendships as both the most important and satisfying of all companions (Larson & Richards, 1991; Lempers & Clark-Lempers, 1992; La Greca & Harrison, 2005), with friends becoming key providers of social and emotional support surpassing even parents by middle adolescence (Furman & Buhrmester, 1992; Rubin, Bukowski, & Parker, 2006; Wilkinson, 2004).

1.3.4.3 Adolescent Romantic Relationships

Dating and romantic relationships comprise a significant part of adolescents' social world (Brown, 2004; Collins et al., 2009). Although involvement in romantic relationships is atypical in the early years of adolescence, romantic involvement becomes more normative with age wherein most US high school students reported at least one romantic relationship by late adolescence (Carver, Joyner, & Udry, 2003; Feiring, 1996; Shulman & Scharf, 2000). Romantic relationships are generally described within the broader framework of adolescents' interpersonal relationships with the peer group providing exposure to potential romantic partners, and experiences within mixed-sex friendship groups generally facilitating adolescents' involvement in

romantic relationships (Connolly, Craig, Goldberg, & Pepler, 2004). For sexual-minority adolescents, the development of romantic relationships is more complex with romantic relationships pursued with peers of both sexes or abstained from completely throughout adolescence (Diamond, Savin-Williams, & Dube, 1999; Savin-Williams, 1996). Adolescent sexual minorities may also engage in alternative relationships in place of romantic relationships (Diamond, 2000).

Developmental changes are typically experienced both within and over several romantic relationships (Bouchey & Furman, 2003; Furman, 2002). Romantic relationships evolve from more casual and fleeting encounters in early adolescence to more exclusive long-term relationships in late adolescence whereby only one partner is typically reported and sexual activity is incorporated (Diamond et al., 1999; Seiffge-Krenke, Overbeek, & Vermulst, 2010). Increases in the positive attributes of romantic relationships inclusive of intimacy, affection, disclosure, and support are likewise reported (Kuttler & La Greca, 2004; Shulman & Scharf, 2000). By late adolescence, romantic partners assume the highest position in the support-provider hierarchy, surpassing parents (Seiffge-Krenke, 2003) and even close friends (Connolly et al., 2000).

Previously dismissed as trivial and transitory (Collins, 2003), romantic experiences and romantic relationships are postulated to significantly impact many facets of adolescent development including family and peer relationships, academic performances, and the development of identity and sexuality (Furman & Shaffer, 2003). Adolescent romantic experiences also lay the foundation for subsequent romantic relationships in adulthood (Collins & van Dulmen, 2006; Seiffge-Krenke, 2003).

1.4 Research on Adolescent Development

The scientific study of adolescent development was initiated by G. Stanley Hall (1904) who identified the importance of adolescence as a developmental phase with his landmark two-volume work, *Adolescence* (Feixa, 2011). Several developmental transitions made have seen the research on adolescence evolve from dichotomous stage theories into more fluid and dynamic process-oriented qualitative approaches (Petersen, 1988). In general, the scientific study of adolescence has had two overlapping phases and is now on the cusp of a third (Steinberg & Lerner, 2004).

The first phase, lasting approximately 70 years, was characterized by grand models that purportedly applied to all facets of adolescent development beginning with Hall's (1904) theory of recapitulation (Steinberg & Lerner, 2004). Based solely on biology or nurture, these grand theories advanced the idea of adolescence as an inescapable developmental disturbance and were based on a biological reductionist and deficit view of adolescence (Lerner & Steinberg, 2004). Mid-century saw the decline of grand theories of development with research in areas such as anthropology increasingly demonstrating the concept of inherent storm and stress as false (e.g., Mead, 1928). The major empirical studies during this period were not theory-driven but rather atheoretical descriptive studies that failed to synthesis theory and research in their observations of adolescent development (McCandless, 1970). These longitudinal studies, however, enabled the elucidation of basic developmental processes and furthered the understanding of human development across the lifespan in addition to promoting positive youth development (Adams & Berzonsky, 2003; Lerner, 2002).

It was during the second phase that adolescent research became a relational field of inquiry and an example for the broader research conducted looking at the plasticity, diversity and individual agency of human development (Steinberg & Lerner, 2004). The

emerging focus on the ecology of human development and increasing appreciation of the person-environment interaction led to the rise of meta-theories such as the lifespan and ecological perspectives on human development in the 1980s' (e.g., Bronfenbrenner & Morris, 1998). Researchers from other disciplines became interested in studying the interactions of various developmental systems within adolescence and the processes of reciprocal interactions where adolescents were active agents of their own development (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Lerner, 2002). An increased sophistication in theories and methodology also offered opportunities for testing developmental models with adolescence an ideal period for studying the bases of positive human development (Susman & Rogol, 2004; Steinberg & Morris, 2001). As such, the research on adolescence became interdisciplinary with contributions of theoretical and conceptual perspectives, methodology, and creative insights from various other sciences (Adams & Berzonsky, 2003; Petersen, 1988). Shifts in research funding towards applied concerns about youth development also meant that interventions such as policies or programs were increasingly implemented to determine the array of potential outcomes for adolescent development (Steinberg & Morris, 2001).

The study of adolescent development is now characterized by a fusion between adolescent research and applied concerns about youth development where community-based and change-oriented methods to study both the development and efficacy of programs and policies are actively promoted (Lerner & Steinberg, 2004). In this third phase, the scientist-policymaker-practitioner collaboration is the central organizing frame from which research conducted to understand the basis, parameters and boundaries of the plasticity of human development can be used to advance interventions that promote healthy adjustment and wellbeing (Lerner, Fisher, & Weinberg, 2000). Through reciprocal collaboration, it is believed that the scientific study of adolescent

development can continue to contribute to the research literature and society at large (Steinberg & Lerner, 2004).

Adolescence continues to be an area of scholarly interest. It is a dynamic period of human development that allows researchers to understand how development at any point in the lifespan involves individual differences, multiple relationships, and diverse, active and multi-tiered ecologies (Bronfenbrenner, 1979, 2001). The study of adolescence also permits the examination of other theories such as family systems theory (Minuchin, 2002) and attachment theory (Bowlby, 1969/1982), and determines their applicability to understanding the importance of relationships across the lifespan (Smetana et al., 2006). This recognition of the importance of relationships is evinced in the increased focus on adolescents' relationships beyond the family, and the re-conceptualization of adolescent developmental processes such as autonomy in relational terms (Collins et al., 2000; Collins & Steinberg, 2006). Specifically, interpersonal relationships present as physical and institutional resources in the social environment that are just as essential for promoting positive youth development as are individual assets (Zarrett & Lerner, 2008).

1.5 Conclusion

Regardless of whether it is viewed as a distinct period of life or as a socio-cultural construct, few can deny the importance of adolescence as a pivotal period of development where many positive health behaviors are first consolidated and important health risk behaviors become evident (Williams et al., 2002). Adolescence is a time of heightened risk for the onset of psychopathology (Copeland, Shanahan, Costello, & Angold, 2009) and identifying both risk and protective factors for adolescent

psychological health is crucial given the continuity of adolescent maladjustment into adulthood (Clark et al., 2006).

The study of successful adaptation is integral to an understanding of the etiology, prevention, and treatment of problems in development (Masten & Coatsworth, 1995; Masten, Hubbard, Gest, Tellegen, Garmezy, & Ramirez, 1999). An increased understanding of the reciprocal relationship between environmental contexts and adolescent development (Short & Russell-Mayhew), and knowledge that problem behaviors are complexly determined (Dekovic, 1999) has seen a recent shift towards the identification of strengths and protective factors within adolescents themselves and across multiple settings (Kazdin, 1997; Larson, 2000; Richardson, 2002). The social environment in which the adolescent is embedded, and includes his or her relationships network, both informs and influences the adolescent's psychosocial development, wherein strong relationships with parents and peers especially play an influential role in predicting positive development (O'Connor et al., 2010; Bowen & Chapman, 1996). However, there is still a dearth of knowledge regarding how relationship networks exert their influences and of their changing roles throughout adolescence although their influence on adolescent development is acknowledged (Fletcher, Darling, Steinberg, & Dornbusch, 1995; Laursen & Mooney, 2008).

Recent conceptualizations of adolescent development have seen a proliferation of interest in understanding adolescent developmental processes using relational terms (Collins et al., 2000; Collins & Steinberg, 2006; Smetana et al., 2006). Attachment theory offers a framework from which to understand the dynamic, transactional relationships between self-development and interpersonal context during adolescence (Moretti & Holland, 2003). Attachment theory's pioneer, Bowlby (1979) claimed that attachment processes exert influence from 'the cradle to the grave' (p. 129), and the central developmental task of establishing autonomy in adolescence can be framed in

attachment terms – that of maintaining a sense of connection and a secure base in relationships with parents whilst simultaneously expanding, reorganizing, and renegotiating close relationships and the attachment functions these relationships serve for the developing adolescent (Kobak, Rosenthal, Zajac, & Madsen, 2007; Moretti & Holland, 2003). Examination of adolescent developmental processes through the lens of attachment theory provides a coherent means of understanding the importance of interpersonal relationships for adolescent psychological health.

The following chapter will provide an overview regarding the modern trends of adolescent psychological health and detail the changes that occur to significant interpersonal relationships during this period. Chapter Three provides an overview of attachment theory and its historical underpinnings. It introduces current trends in the assessment of interpersonal relationships that has seen a movement from examining individual differences in the attachment dyad to examining the normative development of attachment networks. Chapter Four presents findings pertaining exclusively to attachment in an adolescent population and outlines the challenges associated with measuring attachment in adolescence. It also reviews the current literature investigating the influences of parent and peer relationships for adolescent psychological health. Chapter Five reviews three of the most significant studies examining adolescent attachment networks and provides a rationale for the current research. Findings from the cross-sectional study examining developmental trends in adolescent attachment networks and adolescent adjustment are presented in Chapters Six and Seven respectively. Chapter Eight highlights different ways of conceptualizing change in adolescent attachment networks and presents results and discussion of the longitudinal study conducted. Finally, a general discussion of both studies will be presented in Chapter Nine in light of clinical and research implications.

CHAPTER 2

Adolescent Adjustment and Interpersonal Relationships

2.1 Introduction

Adolescence is generally recognized as the period between puberty and legal adulthood but neither of these occurs at a fixed point (Costello, Copeland, & Angold, 2011). The 20th century has seen both an earlier age of onset of puberty and a delay in age at which adult social roles and responsibilities are adopted (Sawyer et al., 2012). These trends have changed the landscape of adolescence, with the lengthening of time between sexual and social maturity posing a challenge to adolescents themselves and the wider community (Costello et al., 2011). Whilst providing enhanced opportunities for positive growth, the protracted period of adolescence also results in increased stressors and significant risks for psychological and physical health (Gonzalez, Casas, & Coenders, 2007).

Advances in cognition and transformations in social roles allow adolescents to engage the world as developing adults, yet psychological health issues increase in incidence and prevalence during this period (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005; Roberts, Attkisson, & Rosenblatt, 1998). Similarly, the ability to make autonomous choices in adolescence sees an escalation of problem behaviors and threats to physical health through substance abuse, unprotected sex and other risk-taking behaviors (Compas, 2004). More alarmingly, epidemiological studies have charted increases in adolescent emotional and behavioral problems over the last 50 years that are persisting into the 21st century (Collishaw et al., 2010; Srinath, Kandasamy, & Golhar, 2010).

To address these trends of adolescent maladjustment, researchers have actively applied research to interventions designed to prevent or reduce the problems adolescents are facing on the one hand (Gonzalez et al., 2007), and to promote positive youth development on the other (Zarrett & Lerner, 2008). Aligned with a strengths-based approach towards adolescent development (Edwards, Mumford, & Serra-Roldan, 2007; Oberle, Schonert-Reichl, & Thomson, 2010), there is increasing recognition that interpersonal relationships play crucial roles as both mediating and moderating factors in adolescent development within the contexts of the family, school, community, and society (Goldstein, Davis-Kean, & Eccles, 2005; Lerner & Galambos, 1998). Among the relationships in the adolescent's interpersonal network, parent and peer relationships are considered the most central (Wilkinson, 2004).

This chapter examines some of the trends regarding adolescent psychological health globally, with an emphasis on the wellbeing of Australian adolescents. Further, it elaborates on changes that occur to parental and peer relationships during adolescence, and their effects for both adolescent development and psychosocial functioning.

2.2 Adolescent Psychological Health

According to the World Health Organization (WHO, 2010), the estimated prevalence of psychopathology in childhood and adolescence is between 15 to 20% globally, with some studies reporting prevalence of greater than 20%. Substance use, anxiety and affective disorders account for a significant proportion of the mental health burden in adolescence (Costello et al., 2011; Costello, Egger, & Angold, 2005), which is worrying given previous projections predicting depression alone as one of the world's largest health problems by 2020 (Harvard School of Public Health, 1996). The contribution of mental disorders to the non-fatal burden of disease rises sharply throughout

adolescence, and accounts for approximately 50% of the burden of disease among young people aged between 10 to 24 years (Gore et al., 2011).

Adolescent morbidity, especially suicide mortality among adolescents and young adult males, has risen in many countries over recent years (Hawton & James, 2005; Maughan, Iervolino, & Collishaw, 2005). Most adolescent deaths and injuries are preventable, and account for approximately 40% of all youth mortality by contrast with individuals aged over 25 years for whom these injuries account for only 10% of deaths (Patton et al., 2009). Many of the mental disorders and health-risk behaviors are precursors to more severe and disabling conditions in later life and represent a very high cost to society in both human and economic terms (WHO, 2010). Collectively, these trends have created a “health crisis” according to the 2003 report to the nation from the Commission on Children’s Risk (Satcher, 2000).

The disturbing global trends in adolescent ill-health and problem behaviors have likewise been demonstrated in Australia. According to the 2007 National Survey of Mental Health and Wellbeing conducted by the Australian Bureau of Statistics (ABS, 2008), a quarter of the 2.5 million young people (16 to 24 years old) surveyed experienced symptoms concordant with a psychological disorder in the prior 12 months. Young people were four times more likely than older people (75 to 85 years old) to have a mental disorder, with 15% and 6.3% of them reporting 12-month anxiety and affective disorders respectively (ABS, 2008). Substance abuse was more prevalent among younger people than other age groups with 13% of youths surveyed reporting symptoms of a substance use disorder in the last 12 months (ABS, 2008). Overall, 16.9% of youths surveyed reported psychological disorders while 9.5% had both a psychological disorder and a physical health condition (ABS, 2008).

With reference to adolescents aged between 15 and 19 years, progress reports by the Australian Institute of Health and Wellbeing (AIHW, 2008) revealed that psychological

health and behavioral problems were reported by 11% of males (100, 000 males) and 9% of females (80, 000 females), which approximated to one in every ten adolescents from 2004 to 2005. Affective disorders were most common for adolescent females while problems of psychological development were most common for male adolescents (AIHW, 2008). One quarter of all adolescents (14 to 19 years old) were found to regularly engage in risky alcohol consumption, with one in every ten at risk of long-term harm (AIHW, 2008). Further, one in six adolescents reported recent use of an illicit drug and approximately one-tenth of all youths have engaged in adolescent smoking (AIHW, 2008). Harm to health also stemmed from the substance-taking activities of others with more than 300,000 adolescents reporting actual violence or threats to their personal safety (AIHW, 2008).

Psychological disorders are the leading cause of disability among Australian youths and account for 50% of the burden of disease in this age group (Begg, Vos, Barker, Stevenson, Stanley, & Lopez, 2007; Patel, Flisher, Hetrick, & McGorry, 2007). Females (13%) are twice as likely as males (6%) to report high or very high levels of psychological distress, and more likely than males to have experienced mental disorders (30% and 23% respectively) (AIWH, 2011). Despite the presence of health care and treatment services in Australia, only 23% of young people access services for mental health problems compared with 38% of those aged 25 years and over (AIWH, 2011).

These troubling trends highlight the uniqueness of adolescence as a risk period for psychological disorders (Copeland et al., 2009), and emphasize the importance of identifying and understanding factors that prevent psychopathology or promote positive psychology within the adolescent's environment (Clark et al., 2006). For many adolescents, the family and peer environments can work together to promote positive psychosocial development (Goldstein et al., 2005; Short & Russell-Mayhew, 2009).

2.3 Interpersonal Relationships

Research has clearly demonstrated that satisfactory relations with parents and peers are connected to positive development and outcomes in adolescence (Corsano, Majorano, & Champretavy, 2006; Laursen & Collins, 2009). Alongside the many other developmental changes which occur during adolescence, interpersonal relationships with parents and peers change dramatically in structure and quality (De Goede, Branje, Delsing, & Meeus, 2009). Adolescents spend decreasing time with their parents, and appear to emotionally disengage from them (Fuligni, Eccles, Barber, & Clements, 2001). Progressively more time is spent with peers, with greater emphasis placed upon approval, views, and contact with them (Mounts & Steinberg, 1995). The peer network also grows dramatically in size and diversity (Brown, 2004).

Parent-adolescent relationships are conceptualized as vertical relationships, and are involuntary, hierarchical and constrained by kinship (Laursen & Bukowski, 1997; Youniss & Smollar, 1985). In comparison, peer relationships are horizontal relationships which are voluntary, symmetrical, egalitarian, and more easily dissolved (Laursen, 1996; Laursen & Collins, 1994). Both of these relationships play overlapping but different roles in socializing adolescents, and have important albeit different contributions to optimal adolescent development (Collins, 1997; Field, Diego, & Sanders, 2002).

2.3.1 Parent-Adolescent Relationships

Adolescence is a period where structural and qualitative changes occur in the parent-adolescent relationship even while the stable characteristics of the relationship established in childhood endure (Collins & Repinski, 1994). The many transformations

in the parent-adolescent relationship can be parsed into three developmental changes of harmony, autonomy, and conflict (Steinberg and Silk, 2002).

Harmony, or the affective tie between parents and adolescents, purportedly remains relatively stable throughout adolescence, with most reporting warm and positive relationships between them (Loeber, Drinkwater, Yin, Anderson, Schmidt, & Crawford, 2000). Harmony persists despite decreased interactions with parents (Helsen et al., 2000; Larson, Richards, Moneta, Holmbeck, & Duckett, 1996), increased negative affect towards parents (Kim et al., 2001), and declines in perceived closeness, support, and quality of the parent-adolescent relationship (Collins, Haydon, & Hessemeyer, 2007; McGue et al., 2005). This apparent contradiction is seen as age-appropriate and necessary for establishing autonomy in adolescence (Madsen & Collins, 2008).

Autonomy is considered a central developmental task for adolescents, and parents and adolescents alike must strike a delicate balance on the amount of autonomy granted (Eccles, Early, Fraser, Belansky, & McCarthy, 1997; Williams, 2003). Autonomy in parent-adolescent relationships typically increases between early and middle adolescence (Pinquart & Silbereisen, 2002), and acquiescence to parents decreases between preadolescence and middle adolescence (Smetana, Yau, & Hanson, 1991). Parental control and supervision also decreases throughout adolescence (Keijsers et al., 2009; Shearer, Crouter, & McHale, 2005), and parentally-imposed restrictions, responsibilities, and familial decision-making are renegotiated in light of the adolescent's growing autonomy (Collins, Lawson et al., 1997; Fuligni & Eccles, 1993). More autonomy and less support from parents are typically reported by older than younger adolescents (Scholte, van Lieshout, & van Aken, 2001).

Conflict is normative in most parent-adolescent relationships (Vazsonyi, 2004). Conflict with parents is highest from early to middle adolescence before declining with age (Collins & Laursen, 2004; De Goede et al., 2009b). Parent-adolescent conflicts are

generally resolved through disengagement or acquiescence to parents, and purportedly have few negative repercussions on the relationship (Laursen & Collins, 1994; Scharf & Maysless, 2007). Overall, most parents and adolescents successfully adapt to the adolescent's changing needs (Steinberg & Silk, 2002), with conflicts contributing to the establishment of autonomy among adolescents (Grotevant & Cooper, 1986).

Parents are key resources for adolescents' successful transition to adulthood and their psychosocial functioning (Boutelle et al., 2009). The quality of the parent-adolescent relationship has been positively associated with academic performance (Hair, Garrett, Kinukawa, Lippman, & Michelson, 2005), happiness (Flouri & Buchanan, 2003), self-esteem, and life satisfaction, and negatively associated with physical health symptoms (Sobolweski & Amato, 2007) and depression (Branje, Hale, Frijns, & Meeus, 2010; Eshbaugh, 2008). A high quality of parent-adolescent relationship is considered protective against delinquency, risk-taking behaviors, and early age for sexual intercourse (Hair et al., 2005; Resnick et al., 1997).

Increasing autonomy in the context of warm parent-adolescent relationships is most optimal for adolescent development, and allows adolescents to build self-esteem, personal efficacy, spontaneous self-disclosure (Williams, 2003), and self-regulation (Purdie, Carroll, & Roche, 2004). By contrast, adolescents who gain premature autonomy or do not receive age-appropriate autonomy are more likely to associate with deviant peers (Vitaro, Brendgen, & Tremblay, 2000), demonstrate extreme peer orientation (Claes, Lacourse, Ercolani, Pierro, Leone, & Presaghi, 2005; Fuligni et al., 2001), and are at risk of various problems (Barrera, Biglan, Ary, & Li, 2001; Mahoney & Stattin, 2000).

Chronic parent-adolescent conflict is considered maladaptive for adolescent adjustment and later psychosocial functioning (Barber & Delfabbro, 2000; Vazsonyi & Belliston, 2006). High levels of conflict are linked to poorer peer competence and

compliance with school rules in early adolescence (Adams, Ryan, Ketssetzis, & Keating, 2000). Moreover, conflict can continue or escalate pre-existing difficulties in the parent-adolescent relationship, resulting in further deterioration of the relationship (Collins & Laursen, 2004). When resolved constructively, conflicts play an important role in promoting adolescents' social and cognitive development (De Goede et al., 2009b).

2.3.2 Peer Relationships

Adolescents are embedded in a rich network of different types of peer relationships including social crowds, cliques or friendship groups, intimate friendships, and romantic relationships (Urberg, Degirmencioglu, Tolson, & Halliday-Scher, 1995). These relationship types are conceptually and empirically distinct (Degirmencioglu et al., 1998), and serve different purposes for individuals' development as they move from early to late adolescence (Newcomb & Bagwell, 1998; Rubin et al., 2006). Although unique, these friendship types are embedded in, or affected by the interactions of other friendships types, with the entire peer system further nested within the larger social contexts of school or the community (Brown, 2004; Cillessen, 2007). There are considerable individual differences and cultural variability in both the features and quality of these peer relationships during adolescence (Larson, Wilson, Brown, Furstenberg, & Verma, 2002). Adolescents thus use their prior knowledge and social skills from engaging with other peers and family alike to navigate through this new elaborate system of peer relationships (Rubin, Bukowski, & Parker, 1998).

2.3.2.1 Crowds

The broadest level of peer-group association is the crowd. Crowds refer to groups of adolescents who share a similar stereotyped image or reputation among peers, or a common feature such as ethnicity or neighborhood (Brown, 2004). Crowds generally emerge during early to middle adolescence (Smetana et al., 2006) and membership is defined by reputation rather than actual interactions or friendships (Brown, 1990; La Greca, Prinstein, & Fetter, 2001). Most crowds are characterized by stereotypical norms that collectively define a distinct lifestyle (Stone & Brown, 1999; Van Zalk, Van Zalk, & Kerr, 2011), but become increasingly differentiated, more permeable and less hierarchical across adolescence which enables easier transitions between crowds and increases opportunities to enhance social status (Kinney, 1993, 1999).

Crowds have been linked to identity formation with the 'group identity' forming the basis for self-definition and providing an avenue towards an individuated autonomous self (Newmann & Newmann, 1976; Van Zalk et al., 2011). Crowds serve as reference groups (Brown, Von Bank, & Steinberg, 2008) and are highly influential in structuring behaviors, activities and self-conceptions consistent with the group's norms (Susman, Dent, McAdams, Stacy, Burton, & Flay, 1994; Younnis, McLellan, & Strouse, 1994). Crowd affiliations promote particular behaviors and values, and structure opportunities to develop certain peer relationships and not others (Brown, Mory, & Kinney, 1994; Urberg, Degirmencioglu, Tolson, & Halliday-Scher, 2000). Whilst individuals are particularly susceptible to peer pressure in early adolescence (Doornwaard, Branje, Meeus, & Ter Bogt, 2012), the influence of crowds subsequently declines over middle to late adolescence as adolescents become more self-assured of their identities and the need for affiliation with a crowd diminishes (Brown, 1990; Brown, Feiring, & Furman, 1999).

2.3.2.2 Cliques

Cliques comprise smaller groups of three to 12 individuals with an average of five members (Ennett & Bauman, 1996; Ennett, Bauman, & Koch, 1994). Characterized by friendship and shared activities among its members (Rubin et al., 1998; Steinberg & Morris, 2001), cliques tend to be homogenous in age, race, socioeconomic status, behaviors and attitudes, and are generally of the same sex in early adolescence (Smetana et al., 2006). Membership to a clique is most common in early adolescence (Ryan, 2001; Thompson, O'Neill Grace, & Cohen, 2001). Cliques are generally stable in terms of their defining characteristics (Hogue & Steinberg, 1995) but membership and structure within the clique is fluid (Furrer, 2010). By late adolescence, the group system transforms from a series of disparate cliques into loose-knit groups tied together by liaisons (Brown & Klute, 2003).

Cliques are vehicles for social control and socialization (Brown & Klute, 2003). The status hierarchy and relative group status of the clique provide normative regulation and redirection toward adolescent social norms and the processes within that system (Dishion, Spracklen, Andrews, & Patterson, 1996). Cliques can promote self-esteem and engagement with social-developmental tasks (Tarrant, MacKenzie, & Hewitt, 2006) but also reinforce delinquent behaviors (Haynie & Osgood, 2005; Kiuru, Burk, Laursen, Salmela-Aro, & Nurmi, 2012; Urberg, Degirmencioglu, & Pilgrim, 1997). They also function as an instrument for socialization and opportunities with clique memberships paralleling the development of intimacy and sexuality in adolescence (Connolly et al., 2000; Connolly et al., 2004; Dunphy, 1963). Cliques enable adolescents to participate in mixed-sex interactions either indirectly through observation or directly through group activities, both of which increase romantic interest and romantic involvement (Connolly et al., 2004; Dunphy, 1963)

2.3.2.3 Friendships

Friendships are voluntary dyadic relationships of mutual attraction between two individuals with reciprocity and equality governing the social exchanges between them (Hartup & Stevens, 1997; Oswald, Clark, & Kelly, 2004). Between three and five best friendships are generally reported (Hartup, 2001). Adolescents and their friends tend to be highly similar in socioeconomic backgrounds, values, personality dynamics, and school and life orientations (Akers, Jones, & Coyl, 1998; Hartup, 1996; Jaccard, Blanton, & Dodge, 2005). Stability and reciprocity in friendships increases throughout adolescence and with length of friendship, paralleling the development of social cognition and conflict management skills in adolescents (Bowker, 2004; Selman, 1980). Close friendships are considered the most important peer relationships formed during adolescence (La Greca & Harrison, 2005; Rubin, Dwyer, Booth-LaForce, Kim, Burgess, & Rose-Krasnor, 2004).

Adolescent females generally report more intimacy (Brendgen, Markiewicz, Doyle, & Bukowski, 2001), support (Jenkins, Goodness, & Buhrmester, 2002), closeness (Johnson, 2004) and self-disclosure (Pagano & Hirsch, 2007) in their friendships than do males. Both genders also attributed higher quality to friendships with females than males (Smith & Schneider, 2000). Although friends tend to be of the same sex and race (Hartup & Abecassis, 2002), other-sex friendships become more prevalent throughout adolescence with a subset of these eventuating into romantic relationships (Connolly et al., 2000; Feiring, 1999). These other-sex friendships, however, take place in a group setting and are less likely to be stable (Claes, 2003; Chan & Poulin, 2007).

Friendships are central to developmental adjustment in adolescence (Bowker, Thomas, Norman, & Spencer, 2011). Friendships provide the context for both socialization and growth in the capabilities to form and maintain intimate relationships

in adolescence and beyond (Rubin et al., 2006; Sullivan, 1953). Through exchanging ideas and shared interests with friends, adolescents learn to engage in reciprocal disclosure and intimacy and receive feedback and consensual validation which serve to strengthen their self-efficacy and identity (Bandura, 1982; Bowker, 2004). Friendships provide developmentally salient opportunities to collaboratively develop social skills and competencies such as mutual perspective-taking, compromise, cooperation, competition, empathy and altruism (Buhrmester & Furman, 1986; Collins & Steinberg, 2006; Furman, 1999). Practicing these social skills in friendships additionally teaches adolescents how to emotionally self-regulate and negotiate conflicts, and increases knowledge of the self (Claes, 1992; Laursen, Hartup, & Koplas, 1996; Weimer, Kerns, & Oldenberg, 2004).

Adolescent friendships also serve as a template for adult friendships and romantic relationships and lay the foundation for romantic intimacy (Collins et al., 2009; Morgan & Korobov, 2012). Friendships contribute to the romantic and sexual socializations of adolescents by allowing adolescents to practice intimacy and other components of romantic relationships in an egalitarian, voluntary, and non-sexual context (Hartup, 2001; Seiffge-Krenke, 1995). Friends are an essential source of information and facilitate the communication of norms and values regarding passion in romantic relationships (Ha, Overbeek, de Greef, Scholte, & Engels, 2010). Having a best friend in adolescence appears to contribute to the success of early romantic relationships (La Greca & Mackey, 2007; Sroufe, Egeland, & Carlson, 1999), and is associated with an increased likelihood of being romantically-involved in late adolescence and beyond (Collins, 2003). Overall, friendships are an important source of self-esteem, social competence, cognitive and social development, and psychosocial adjustment (Rubin et al., 2004).

2.3.2.4 Romantic Relationships

Romantic relationships are voluntary dyadic relationships acknowledged by two individuals characterized by affiliation, intimacy, companionship, and for most, a sexual component (Brown et al., 1999). Romantic relationships typically first emerge in adolescence (Furman, Low, & Ho, 2009; La Greca & Harrison, 2005) increasing from 4% to approximately 40-50% between early and middle adolescence, with three-quarters of all US student reporting at least one romantic relationship by late adolescence (Carver et al., 2003; Feiring, 1996). Higher percentages, however, participate in dating or casual relationships (Davies & Windle, 2000). Both duration and quality of romantic relationships increase with maturity and through experience within and across several relationships (Collins, 2003; Joyner & Udry, 2000).

Choice of partner in early adolescence is based more on superficial characteristics of the partner and relative peer status (Bouchey & Furman, 2003), with romantic relationships described primarily in terms of affiliation and companionship (Feiring, 1996). By contrast, partner preferences in late adolescence reflect characteristics of commitment, intimacy and compatibility, and romantic relationships are described in terms of trust and support (Shulman & Kipnis, 2001; Zani, 1993). Romantic partners progressively become a large source of support with age but this increase is also moderated by the length of the romantic relationship (Laursen & Williams, 1997; Seiffge-Krenke, 2003). Overall, the evidence accords with the behavioral systems perspective of romantic relationships which posits that romantic partners become increasingly important as they meet more of the adolescent's needs (Furman & Wehner, 1994; 1997).

Generally more adolescent females than males of all ages (except late adolescence) report having a current or past romantic relationship (Brown, 2004). However, more

adolescent males than females report being in love, and at an earlier age (Montgomery & Sorrell, 1998). Having a large network of friends, more other-sex friends and nonschool friends increase the likelihood of a romantic relationship (Connolly & Johnson, 1996; Connolly et al., 2000). In comparison, sexual minority adolescents demonstrate divergent patterns of sexual and romantic relationships (Diamond, 2000; Diamond et al., 1999) because of the complexities involved in finding and maintaining same-sex romantic relationships (Diamond & Savin-Williams, 2003). Sexual minorities are less likely to have any type of romantic relationship experience during adolescence compared to their heterosexual peers (Diamond & Dube, 2002). Romantic relationships are also quite diverse in nature, both within and across cultures (Brown, Larson, & Saraswathi, 2002; Li, Connolly, Jiang, Pepler, & Craig, 2010).

Romantic relationships are considered important markers of social maturity (Connolly & Johnson, 1996), and the formation of a successful romantic relationship is a key developmental task in adolescence (Brown et al., 1999). Experiences in romantic relationships facilitate autonomy from parents and teach adolescents how to relate to peers whilst reaffirming their sense of identity and ‘belonging’ (Furman & Shaffer, 2003; Gray & Steinberg, 1999). Adolescents learn to be interdependent and masterfully coordinate the needs of the self and others, while maintaining intimacy and identity as a couple (Brendgen, Vitaro, Doyle, Markiewicz, & Bukowski, 2002). Adolescent romantic relationships form the foundation for other more committed romantic relationships in adulthood and are influential for psychological wellbeing (Overbeek, Stattin, Vermulst, Ha, & Engels, 2007; Seiffge-Krenke, 2003). The links between romantic experiences and adolescent adjustment have been shown to vary according to both timing and degree of romantic involvement, and the quality of the romantic relationship (Davies & Windle, 2000; La Greca & Harrison, 2005; Zimmer-Gembeck, Siebenbruner, & Collins, 2001).

2.4 Conclusion

Recent years have seen a paradigm shift in the approach to investigating child and adolescent development (Oberle et al., 2010). Instead of focusing on the supposed incapacities and negative development of young people, the “positive youth development” approach calls for a focus on conditions that explain, promote, and foster wellbeing aligned with an increased understanding of the relationship between environmental contexts and adolescent development (Damon, 2004; Short & Russell-Mayhew, 2009). Being the most proximal influences to the adolescent (Dekovic, Janssens, & van As, 2003), interpersonal relationships are a cornerstone for successful adaptation and a reliable indicator of adolescent adjustment (Laursen & Mooney, 2008).

Interpersonal relationships provide an important context for adolescent wellbeing and development although each relationship differs in its specific contribution to individual growth (Noack & Buhl, 2005). The nature of the relationship with parents and peers changes not only as individuals progress through adolescence (Collins, 1997), but through the continuous reciprocal influences between adolescents and their relationships (Sameroff & MacKenzie, 2003), and interactions between the relationships themselves (Goldstein et al., 2005). It is important therefore to investigate how interpersonal relationships change over time and the influences of these changing relationships on adolescent psychological health, to ultimately improve interventions and prevent adolescent maladjustment.

From a developmental perspective, attachment is the theoretical construct which most succinctly embodies an understanding of the implications of earlier relationships on later ones (Carlivati & Collins, 2007), and attachment theory, a useful framework to understand interpersonal relationships throughout the lifespan (Markiewicz, Lawford, Doyle, & Haggart, 2006). Attachment theory proposes that an individual’s

psychological wellbeing and mental health are intimately linked to interpersonal relationships with attachment figures who afford emotional support and security (Bretherton & Munholland, 2008). Therefore, attachment theory provides an avenue by which to explore adolescent adjustment in the context of interpersonal relationships and has more recently received interest from researchers of adolescent development (Collins & Laursen, 2004). Accordingly, attachment theory and its application to adolescent psychological health will be explored further in the following chapters.

CHAPTER 3

Attachment Theory

3.1 Introduction

Attachment theory is a multifaceted theory of personality development, interpersonal relationships and behaviors, and emotional bonds (Mikulincer & Shaver, 2007).

Accounting for both normative development and individual differences (Hazan, Campa, & Gur-Yaish, 2006), attachment theory is an example of a general or ‘grand’ theory predicting behavior and emotion across numerous domains of psychological functioning and interpersonal relationships throughout the lifespan (Waters & Cummings, 2000).

The dominant approach to understanding early socioemotional and personality development (Thompson, 2000), attachment theory has been applied to understanding interpersonal behaviors and psychological health among adolescents and adults particularly in the last two decades (Wilkinson, 2006a).

Attachment theory is the joint work of John Bowlby (1907 – 1991) and Mary Ainsworth (1913 - 1999) (Ainsworth & Bowlby, 1991). At its most fundamental level, attachment is a socioemotional bond with defining behavioral features which ensure the infant’s survival to reproductive age (Bowlby, 1969/1982). Humans are etiologically predisposed to forming attachment bonds with these bonds considered most significant and of continued importance throughout the lifespan (Bowlby, 1969/1982). Attachment is both a set of overt behaviors and a representation or cognitive model of close relationships (Lewis, Feiring, & Rosenthal, 2000).

Individual differences in attachment security first observed by Ainsworth and her colleagues (1978) have subsequently been documented by developmental psychologists and social and personality psychologists in attachment relationships beyond infancy

(Shaver & Mikulincer, 2002). Early attachment relationships were shown to influence the development and maintenance of new attachment relationships (e.g., Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987; Main, Kaplan, & Cassidy, 1985). More recent research has examined the development of normative attachment in adolescents and adults (e.g., Doherty & Feeney, 2004; Fraley & Davis, 1997; Hazan & Zeifman, 1994; Trinke & Bartholomew, 1997).

An overview of attachment theory as proposed by Bowlby and Ainsworth is provided in the present chapter. The development of attachment research beyond infancy progressing from individual difference in adult attachment to normative attachment beyond infancy is also discussed.

3.2 Overview of Attachment Theory

3.2.1 The Attachment-Behavioral System

The central tenet underlying attachment theory is the presence of an innate attachment-behavioral system outwardly manifested in behaviors that predictably maintain proximity of an infant to its primary and one or more secondary caregivers (Ainsworth, 1989). Bowlby (1969/1982, 1973, 1980) postulated that infants have a ‘set-goal’ for caregiver proximity, wherein any discrepancy between this ‘set-goal’ and actual proximity activates the attachment-behavioral system. The attachment-behavioral system becomes quiescent once sufficient proximity to the caregiver is restored, thereby allowing for other behavioral systems, such as affiliation or exploration, to occur (Bowlby, 1969/1982, 1980).

Evolving through natural selection, the attachment-behavioral system confers a survival advantage by ensuring proximity of the infant to the safety of a caregiver in

times of danger (Ainsworth, 1989), and through developing an attachment bond between them (Hazan et al., 2006). Infants are inherently motivated towards forming attachment bonds (Cassidy, 2008), and born with an innate repertoire of species-specific responses that function to bind the infant and caregiver together (Bowlby, 1958). Bowlby (1977) described this as the inclination of human beings to make strong affectional bonds with significant others who can provide protection and support when required.

Although most evident in early infancy, Bowlby (1988) posited that the attachment-behavioral system remains active across the lifespan and is manifested in thoughts and behaviors related to seeking proximity to attachment figures when in need. Attachment relationships remain important for psychological and interpersonal functioning throughout life with individuals benefitting greatly from having at least one attachment figure to depend on (Bowlby, 1969/1982).

3.2.2 Attachment Behaviors or Functions

The attachment-behavioral system is comprised of four sets of distinct, yet inter-related classes of behaviors of proximity-seeking, safe haven, separation protest, and secure base, that regulate the emotional bond between infant and caregiver, and ensures security for the infant (Bowlby, 1969/1982). Proximity-seeking is activated whenever the infant is distressed or separated from its caregiver, and indicates the extent to which the caregiver accurately understands the emotional needs of the infant and is sought for support (Freeman & Brown, 2001). Safe haven captures the extent to which the caregiver is available and responsive to the infant's needs when the child is distressed and searches for contact, safety, and reassurance (Fraley & Davis, 1997). Separation distress is elicited whenever there is a forced separation between infant and caregiver,

or a rupture in their relationship, and signifies the degree to which separation from the caregiver produces anxiety and protest in the infant (Freeman & Brown, 2001). Finally, secure base reflects the sense of ‘felt security’ provided that facilitates active exploration by the infant, and captures the degree of confidence imbued by the caregiver’s commitment and availability as a source of security (Sroufe & Waters, 1977). These attachment behaviors are most clearly demonstrated in infants relative to their primary caregivers, but are postulated to remain functionally equivalent and define attachment at all ages (Hazan & Zeifman, 1994; Bowlby, 1988).

Attachment behaviors or functions develop sequentially in the order of proximity-seeking (lowest), safe haven, separation protest, and secure base (highest), with the latter forming once the other functions are fulfilled (Hazan & Zeifman, 1994; Zeifman & Hazan, 2008). Full attachment relationships are characterized by the presence of all four functions within the relationship (Parke, Morris, Schofield, Leidy, Miller, & Fly, 2006), with attachment figures defined by the selective orientation of all four attachment behaviors towards them (Hazan, Gur-Yaish, & Campa, 2004). Research has demonstrated that the functions fulfilled by the attachment figure during infancy also exist in emotionally significant relationships in adulthood (Fraley & Shaver, 2000).

3.2.3 Attachment Bonds

Attachment bonds are characteristics of the individual, and “entail representation in the internal organization of the individual” (Ainsworth, 1989, p. 711). Although formulated within the dyadic relationship, attachment bonds are a specific class of affectional ties formed by one individual to another perceived as “stronger and/or wiser” (Bowlby, 1973, p. 292). The partner or attachment figure is seen as unique and never wholly replaceable or interchangeable with any other (Ainsworth, 1967;

Schuengel & van IJzendoorn, 2001). Attachment bonds are persistent and emotionally significant with the desire to maintain proximity to the attachment figure, distress upon involuntary separation, pleasure and joy upon reunion, and grief at loss (Ainsworth, 1989).

The defining characteristics which separate attachment bonds from other affectional bonds are the seeking of security and support in the relationship, and the use of the attachment figure as a secure base from which to engage in nonattachment-related activities (Ainsworth, 1989; Weiss, 1982). The concept of the secure base is a key organizational construct in attachment theory (Waters & Cummings, 2000), and serves to distinguish it from psychodynamic and learning theory perspectives (Ainsworth, 1969).

Attachment bonds take time to develop with four phases proposed in the development of the infant-caregiver attachment bond (Ainsworth, 1973; Bowlby, 1969/1982). In the first preattachment phase (0 – 2 months of age), infants are inherently interested in social interactions and accepting of care from almost anyone. Subsequently in the attachment-in-the making phase (2 – 6 months), infants begin to discriminate among caregivers and preferentially direct social signals to, and differentially respond to preferred caregivers. The emergence of secure base behaviors in the clear-cut attachment phase (6 – 24 months) lead to infants now exhibiting distress when separated from their attachment figures. In the final phase of goal-corrected partnership (around 24 months), children have less urgent need for actual proximity, and become capable of negotiating separations and availability with their caregivers (Hazan et al., 2004; Marvin & Britner, 2008). Attachment formation in adulthood between romantic partners is posited to follow a similar four-phase developmental process as that found for infant-caregiver attachment formation (Zeifman & Hazan, 1997; Hazan & Zeifman, 1999).

3.2.4 Monotropy and the Hierarchy of Caregivers

All infants are capable of forming multiple attachment bonds (Bowlby, 1969/1982). Infants generally become attached to their primary caregiver within the first eight months of life (Hazan & Shaver, 1994), and subsequently form attachments to other familiar caregivers by nine or ten months of age (Feeney & Noller, 1996). Infants have only “a small hierarchy of major caregivers” (Bretherton, 1980, p. 195) with the majority of infants observed to have at least one secondary attachment figure by 18 months, and several establishing five or more additional caregivers (Ainsworth, 1967; Schaffer & Emerson, 1964).

Attachment figures are arranged in a hierarchy according to importance, with one primary attachment figure principally relied upon to meet attachment needs and several subsidiary attachment figures available should the primary attachment figure be absent (Ainsworth, 1969; Bowlby 1969/1982). Infants form a primary attachment bond to the individual who most reliably provides care and is responsive to their distress (Hazan & Shaver, 1994; Bennett, 2003). They show clear discrimination and consistent preferences (Colin, 1987), and reliably seek and maintain proximity to the primary caregiver especially if distressed, hungry, tired or ill (Ainsworth, 1973, 1982). This preference for a particular attachment figure for security and comfort is termed “monotropy” (Bowlby, 1969/1982). Monotropy is evolutionarily adaptive by ensuring that one attachment figure assumes primary responsibility for the infant, and providing the infant with an automated response to seek the principal attachment figure in times of need (Cassidy, 2008).

3.2.5 Attachment Reorganization

In line with the lifespan concept of attachment, Bowlby (1969/1982) asserted that changes to both the composition and structure of the individual's attachment hierarchy are developmentally normative. As individuals move from childhood through adolescence and into adulthood, romantic partners will eventually replace parents at the top of the attachment hierarchy. This process of shifting attachment needs from parents to peers is termed attachment reorganization with aspects of attachment, such as proximity-seeking, already present in peer relationships by childhood (Hazan & Zeifman, 1994; Zeifman & Hazan, 2008).

Attachment reorganization occurs in a sequential fashion analogous to the formation of attachment in infancy, beginning with proximity-seeking and ending in secure base (Hazan, Hutt, Sturgeon, & Bricker, 1991). Depending on the developmental stage of the individual, he or she preferentially directs attachment needs towards the attachment figure perceived as most available and responsive (Hazan et al., 2006) and able to meet current needs (Mikulincer & Shaver, 2007). Parental figures remain permanent members of the hierarchy, and their positions naturally change as the child matures and parents penetrate fewer areas of the individual's life than before (Allen & Land, 1999; Ainsworth, 1982). Individuals therefore orient towards different attachment figures for different attachment needs, with an overwhelming majority reporting clear preferences for a peer, usually the romantic partner, by adulthood (Doherty & Feeney, 2004).

3.2.6 Attachment Working Models

Although most infants become attached by the first year of life, not all are securely attached to their attachment figures (Cassidy, 2008). Individual differences in

attachment security reflect differences in the quality of early infant-caregiver interactions (Weinfield, Sroufe, Egeland, & Carlson, 2008), and denote the extent to which the attachment figure can be reliably counted upon both as a haven of safety and a source of security (Ainsworth, Blehar, Waters, & Wall, 1978). Individual differences in attachment quality are postulated to form the foundation for later differences in social and personality development (Sroufe, 2005).

Individual differences in attachment security can be broadly categorized into secure and insecure attachments (Ainsworth et al., 1978; Bowlby, 1973). Through repeated interactions with caregivers in the first year of life, infants construct internal working models (cognitive representations of the self and other) that enable infants to anticipate the future, make plans, and guide interactions with future others (Bowlby, 1973). Secure infants experience warm, responsive and supportive infant-caregiver relationships, and develop attachment models that enable them to foster positive relationships with others, and to confidently explore and assert mastery of their environments (Bowlby, 1973). In contrast, infants who lack accessible and/or responsive caregivers develop insecure working models of the self and other (Bowlby, 1973). Bowlby (1973, 1988) maintained that internal working models are tolerably accurate representations of actual experiences with caregivers. Expectations around availability of the attachment figure become increasingly consolidated between infancy and adolescence with attachment working models tending to endure across the lifespan relatively unchanged (Bowlby, 1973; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000).

By referring to these cognitive representations as working models, Bowlby (1969/1982, 1973) emphasized the developmental nature of internal working models, and also their malleability and adaptation with attachment expectancies constantly subject to revision in light of social experiences and life events. Attachment working models become increasingly complex throughout development and allow individuals to

additionally reflect on current, past and future relationships through means of internal simulation (Bowlby, 1988). On the other hand, Bowlby (1973) acknowledged that attachment models become more habituated and “automatized” with age, and more resistant to change. Subsequent experiences are biased in their selection, interpretation and responses by established working models (Bowlby, 1973). Therefore, attachment expectancies formed in infancy form prototypes that guide future interactions with others (Bowlby, 1973; Bretherton, 1990) but are not immutable to change. Current experiences are capable of eliciting revisions in established expectations of attachment while simultaneously being constrained by earlier attachment models (Sroufe, 2005).

3.3 Individual Differences in Infant Attachment

The first controlled study exploring individual differences in attachment was conducted by Ainsworth and her colleagues (1978) using a laboratory paradigm known as the ‘Strange Situation’. The Strange Situation comprises 8 episodes intended to activate the infant’s attachment-behavioral system and make apparent the child’s expectations regarding availability of the caregiver. The Strange Situation also reveals the infant’s ability to strike a balance between exploring an unfamiliar environment and seeking reassurance from the caregiver (Kobak, 2002). Based primarily on the infant’s response to the caregiver upon reunion following separation, and on interactions between the infant and caregiver during free-play, the three distinct attachment styles of Secure, Anxious-ambivalent, and Avoidant were identified.

Infants classified as securely attached were distressed by separation, but sought proximity and were readily comforted upon reunion, confidently exploring their surroundings in the caregiver’s presence. Anxious-ambivalent infants evinced ambivalent behaviors towards their caregivers and an inability to be comforted upon

reunion, demonstrating preoccupation with separation from caregivers, distress prior to the separation itself, and a reluctance to explore their environment. Infants classified as avoidant exhibited signs of detachment, and avoided proximity or reunion with the caregiver upon return. The majority of the infants observed were classified as securely attached with findings in the Strange Situation complementing Ainsworth's previous observations of infant attachment patterns in her Baltimore home observations (Ainsworth & Wittig, 1969; Ainsworth, Bell, & Stayton, 1974). An attachment classification of Disorganized/Disoriented was subsequently added to this system and is characterized by conflicted, contradictory or disoriented behaviors upon reunion with the caregiver, which represents breakdowns in the organization of attachment behaviors (Main & Solomon, 1990). The Strange Situation paradigm is now the standard by which attachment measures at later ages are judged (Weinfield et al., 2008).

Ainsworth's work was pioneering in several regards. Her innovative methodology provided empirical evidence for some of Bowlby's theory, and the utility of both naturalistic home observations and laboratory paradigms enabled her to focus on meaningful behavioral patterns in context (Bretherton, 1992). She was the first to both systematically test and measure infant attachment behaviors in safe and stress-inducing contexts (Coupe, 2008), and to formally classify individual differences in infants' attachment security (Weinfield et al., 2008). Individual differences in attachment behaviors were associated with infant-caregiver interactions in the first year of life, with maternal sensitivity and responsiveness resulting in the development of a secure infant attachment style (Kobak & Madsen, 2008). Ainsworth thus contributed the concept of the attachment figure as a secure base from which to explore, and demonstrated the importance of maternal sensitivity for the development of infant-mother attachment patterns (Bretherton, 1992).

The major limitation of the Strange Situation is its reliance on actual proximity and separation distress behaviors to identify attachment classifications. It became increasingly difficult to test for attachment behaviors once children became capable of goal-corrected partnership (Kobak, 2009). Ainsworth herself recognized this and elaborated that, based on previous interactions, infants form underlying cognitive representations of the caregiver which in turn guide the expectations regarding the caregiver's availability and act as a modifier of the infant's set-goal for proximity (Ainsworth et al., 1978). This cognitive model of the caregiver gives rise to individual differences in attachment classifications and explains why the Strange Situation ceases being stressful for older children (Kobak & Madsen, 2008).

As the Strange Situation could only be reliably used for infants between 9 and 24 months of age (Mikulincer & Shaver, 2007), it became necessary to formulate alternative means to test for individual differences in attachment security through the form of attachment representations or internal working models (Lewis et al., 2000). This was the task readily taken up by developmental psychologists and social and personality researchers albeit through different means.

3.4 Attachment Beyond Infancy

3.4.1 Individual Differences in Adult Attachment

Research examining individual differences in attachment security beyond infancy first commenced in the 1980s. Partly reflecting the lack of a theoretical framework to measure attachment in adulthood, two distinct modes of research emerged using different conceptualizations and measurements of individual differences in adult attachment (Bernier & Dozier, 2002). The first line of research employed by

developmental psychologists continued in the tradition of Ainsworth and her colleagues (1978), and through a combination of observational techniques and subsequent interview formats, focuses on “the intergenerational transmission of attachment” in the study of infant-caregiver attachment relationships (Fraley, 2002a; Shaver & Mikulincer, 2002). The second line of research initiated by social and personality psychologists focuses on current attachment patterns in adulthood by using self-report taxonomies of attachment categories or dimensions to identify internal working models regarding contemporary peers (Jacobvitz, Curran, & Moller, 2002).

The developmental approach is psychodynamic in nature, primarily focuses on the infant-caregiver relationship (Hesse, 1999) and is best exemplified by the Adult Attachment Interview (AAI; Main, Kaplan, & Cassidy, 1985). In turn, the social and personality approach concentrates on social interactions and personality traits in normal populations (Bartholomew & Shaver, 1998) and is represented by categorical measures such as Hazan and Shaver’s (1987) Attachment Prototypes and the Relationships Questionnaire (RQ; Bartholomew & Horowitz, 1991), and by dimensional measures such as the Experiences in Close Relationships Scale (ECR; Brennan, Clark, & Shaver, 1998).

3.4.2 Individual Differences in “Attachment States of Mind”

Developmental psychologists conceptualized current adult attachment patterns as influenced by perceptions of early attachment relationships with caregivers in childhood (Main et al., 1985; George, Kaplan, & Main, 1984, 1996). These perceptions of early childhood attachment experiences were postulated to subsequently affect the attachment patterns of these parents’ own children (Main & Goldwyn, 1998). Proposing to identify the individual’s “state of mind with respect to attachment”, Main and her colleagues

developed the Adult Attachment Interview (AAI; Main et al., 1985) - an hour-long semi-structured interview about adults' childhood attachment experiences and the meaning of these early attachment experiences for later personality development.

Based on the analysis of transcripts, individuals are classified into one of three attachment categories representing a predominant state of mind of secure-autonomous, preoccupied with attachment, or dismissing with respect to attachment (Main & Goldwyn, 1985). An additional classification of unresolved/disorganized is assigned to those who display incoherence in their narratives of experiences surrounding loss or abuse in relation to their caregivers. Strong concordance between the caregiver's own secure state of mind as measured by the AAI and infant attachment security assessed by the Strange Situation five years earlier was demonstrated in their seminal research and subsequently replicated in numerous studies (Fonagy, Steele, & Steele, 1991; Van IJzendoorn, 1992, 1995; Ward & Carlson, 1995). The intergenerational transmission of attachment postulated by Main and her colleagues has also been documented, with longitudinal links established between attachment categories as determined by the Strange Situation in infancy and the AAI in adolescence and adulthood (e.g., Main, Hesse, & Kaplan, 2005; Hamilton, 2000).

Although the AAI provided the first means of studying attachment at "the level of mental representations", several limitations of its classification procedure were noted. The AAI requires in-depth training with the administration and scoring procedure time-consuming and laborious (Kobak, 2002; Waters, Crowell, Elliott, Corcoran, & Treboux, 2002). The criteria for coding the AAI differ among developmental psychologists, and narratives about mothers and fathers are coded jointly and not separately to obtain an attachment category (Carnelley & Brennan, 2002). Subjective judgment is required in coding the narratives with the underlying dynamics of attachment representations inferred and interpreted from the style of the interview rather than through objective

measures of attachment (Belsky, 2002). There is also little systematic evidence linking attachment “states of mind” to other independently measured phenomena of individual differences in emotion regulation, thoughts and behaviors (Bartholomew & Moretti, 2002).

More recent criticisms have challenged the construct validity of the AAI. Firstly, suggestions have been made that the AAI more accurately predicts working models of caregiving than attachment (Allen & Manning, 2007; Shaver, Belsky, & Brennan, 2000). Although validated against infant attachment security as assessed with the Strange Situation, the AAI is argued to reflect the degree to which the caregiver is able to produce a secure infant rather than predict the caregiver’s own security or expectations in attachment relationships (Allen & Manning, 2007; Allen & Miga, 2010). Secondly, researchers assessing adolescent “states of mind” have suggested that the AAI measures the broader construct of emotion regulation in adolescence (Allen & Miga, 2010). Their argument is supported by research demonstrating stronger concordance between adolescents’ AAI classifications and actual adolescent-parent interactions, various aspects of emotion regulation, and social competence in peer relationships than with the parent’s own AAI classification (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Allen et al., 2003).

3.4.3. Individual Differences in Attachment Styles or Categories

3.4.3.1 Hazan and Shaver’s (1987) Attachment Prototypes

By contrast, attachment research by social and personality psychologists commenced with the seminal study conducted by Hazan and Shaver (1987) proposing romantic love as an attachment process. Conceptualizing adult romantic relationships as attachment

bonds wherein individual differences in current romantic experiences were mediated by early attachment history, Hazan and Shaver extended the work of Ainsworth and her colleagues (1978) by applying the three attachment classifications of Secure, Anxious-ambivalent, and Avoidant literally to their self-report measure of adult attachment. They demonstrated the continuity of relationship styles, with love styles found consistent with the individual's own attachment history and approximating the ratios as found for infant attachment styles. All three love styles reported varying love experiences with different beliefs about romantic love, including expectations of their partner's availability and responsiveness, and of their own love worthiness.

Hazan and Shaver were the first to empirically demonstrate that attachment expectancies first developed in infancy contributed to both continuity of attachment styles and individual differences in experiences and beliefs of current romantic relationships. Their Attachment Prototypes questionnaire was, however, limited because it was a single-item measure and unable to account for variations among individuals within an attachment category itself (Crowell, Fraley, & Shaver, 2008). Subsequent research has attempted to address these limitations either through refining their original measure, or developing more sophisticated measures to assess individual differences in adult attachment (Coupe, 2008). One such measure was Bartholomew and Horowitz's (1991) Relationships Questionnaire (RQ) using Bartholomew's (1990) four-group model of adult attachment.

3.4.3.2 Bartholomew and Horowitz's (1991) Relationship Questionnaire

Bartholomew and Horowitz (1991) explored individual differences in adult attachment relative to contemporary peers (e.g., friends and romantic partners), family of origin, and interpersonal functioning. Noting that Hazan and Shaver's (1987)

Avoidant style and Main et al.'s (1985) Dismissing classification differed in degree of avoidance and drawing upon Bowlby's (1973, 1980) ideas about internal working models of Self and Other, Bartholomew (1990) proposed that attachment styles could instead be conceptualized along two dimensions of positive and negative views of the self and others. These models of Self and Other would logically combine to create four prototypes of adult attachment of Secure, Preoccupied, Dismissing, and Fearful (Bartholomew, 1990). Secure individuals have positive models of both self and others whereas Preoccupied individuals have a negative view of self and a positive view of others. Dismissing individuals have a positive model of self but a negative view of others while individuals who are Fearful have negative view of both self and others. Individual differences in attachment style could be accounted for within the region of this two-dimensional space.

Empirical support for the four-group attachment model was found with Bartholomew and Horowitz demonstrating the working models of Self and Other as two separate and distinct dimensions of an individual's attachment orientation that varied independently of each other. Each attachment style was linked to a distinct profile of interpersonal difficulties, with individuals' attachment styles to peers correlated with family attachment ratings. Bartholomew's (1990) four-group model of attachment was further validated using self-report questionnaires and semi-structured interviews (Griffin & Bartholomew, 1994; Scharfe & Bartholomew, 1994; Scharfe & Cole, 2006).

Although Bartholomew later reconceptualized the dimensions of her model of Self and Other as "anxiety over abandonment" and "avoidance of intimacy" respectively (Bartholomew & Shaver, 1998; Kachadourian, Fincham, & Davila, 2004), several criticisms were made at both the theoretical and empirical levels. Fraley and Shaver (2000) argued that the content of the items assessing the dimensions of model of Self and Other were more consistent with an emphasis on sensitivity to rejection and comfort

with dependency on others. Also, limited support was demonstrated in conceptualizing the four attachment prototypes simply by separating models of Self/Anxiety and Other/Avoidance into two independent and orthogonal dimensions (Buelow, McClain, & McIntosh, 1996; Feeney, Noller, & Hanrahan, 1994; Ross, McKim, & DiTommaso, 2006). The model demands that the various attachment style categories remain mutually exclusive, whereas findings indicated that individuals can rate themselves similarly on opposing attachment styles (Crowell et al., 2008; Levy & Davis, 1988) and a significant majority experience difficulty selecting a single attachment category to represent either a general or specific attachment orientation (Davila, Burge, & Hammen, 1997; Mickelson, Kessler, & Shaver, 1997).

3.4.4 Individual Differences in Attachment Dimensions

Although categorical models of attachment proved useful in demonstrating individual differences in adulthood, there is now growing consensus that adult attachment is better conceptualized along two orthogonal dimensions of Anxiety and Avoidance (Feeney, 2002; Mikulincer & Shaver, 2007). Comparisons of responses to categorical and dimensional measures of attachment suggest the former is more prone to response biases including social desirability (Bradford & Feeney, 2000). Dimensional measures of attachment comprise multiple items, and report higher reliability and sensitivity than do categorical measures (Feeney, 2002). They also have greater stability and more easily negotiate the issue of differential base rates (Scharfe & Bartholomew, 1994). Importantly, taxometric analyses have found categorical models of attachment inappropriate for studying variations in adult attachment (Meehl, 1995; Fraley & Waller, 1998). The dimensional approach is considered superior as it accounts for individual differences in attachment style (Brennan et al., 1998; Fraley & Waller, 1998).

Support for this consensus is best illustrated with the Experience in Close Relationships Scale (ECR; Brennan et al., 1998). Conducting an extensive literature search for all available multi-item measures of adolescent and adult attachment and using a large-sample study, Brennan and her colleagues could successfully factor-analyze items taken from the final 14 multi-item attachment measures used into two orthogonal factors of Anxiety and Avoidance. Anxiety corresponds to anxiety and vigilance regarding abandonment and fear, while Avoidance relates to discomfort with closeness or dependency and the avoidance of intimacy (Fraley & Shaver, 2000). Secure attachment is represented by low scores on both dimensions (Bifulco, 2002). These two factors recreated the two discriminant functions identified by Ainsworth and her colleagues (1978) in their prediction of infant attachment styles, and reproduced Bartholomew's (1990, Bartholomew & Horowitz, 1991) four types of adult attachment when subjects were clustered into four groups. Specifically, Anxiety and Avoidance were similar to Bartholomew's models of Self and Other respectively (Griffin & Bartholomew, 1994; Simpson, Rholes, & Philips, 1996). The ECR was also more conservative than Bartholomew and Horowitz's (1991) categorical measure of attachment in classifying a person as secure.

Adult attachment could thus be identified as regions in a two-dimensional space, with Anxiety and Avoidance underlying virtually all self-report measures of adult romantic attachment. Further empirical support for the validity of the two insecure dimensions was provided by Fraley and his colleagues (2000) using item response theory. The ECR had the best psychometric properties among the four self-report measures of attachment identified in their study, and was best represented by Anxiety and Avoidance. They created a revised version of the ECR, the Experiences in Close Relationships Scale-Revised (ECR-R; Fraley, Waller, & Brennan, 2000) to sharpen the discriminant value of the ECR, but noted that like the original ECR, the ECR-R was

better at assessing higher levels of anxiety and avoidance due to the nature of its items. This limitation has also been raised by Bifulco (2002) who questioned the ability of the two attachment dimensions to place someone along a continuum of insecurity, regardless of the individual's avoidant or anxious styles.

3.4.5 Summary of Individual Differences in Adult Attachment

There has been a tremendous growth in the understanding of individual differences in attachment beyond infancy from the initial conceptualizations postulated by Bowlby (1969/1982) and the empirical studies demonstrated by Ainsworth and her colleagues (1978). Developmental psychologists have demonstrated the links between early infant-caregiver attachments and provided the context by which to examine meta-cognition or the capacity to think about and evaluate memories and expectations about attachment figures (Kobak, 2002). In turn, self-report measures created by social and personality psychologists have provided “convenient surface indicators” (Shaver & Mikulincer, 2002, p. 13) of underlying attachment dynamics and associated with a range of behavioral and physiological processes related to attachment behaviors (Bifulco, 2002). Whilst collectively generating a wealth of insight into the nature and meaning of individual differences in adult attachment (Fletcher, 2002), there is increasing evidence that these two approaches measure conceptually different aspects of attachment with few overlaps (Crowell et al., 2008; Mayseless & Scharf, 2007; Roisman, Holland, Fortuna, Fraley, Clausell, & Clark, 2007).

3.4.6 Normative Development of Attachment in Adulthood

Normative development of attachment forms a crucial part of Bowlby's (1969/1982) attachment theory. Bowlby recognized early on the need to identify the normative formation and functioning of attachment in order to fully understand its maladaptive variations (Marvin & Britner, 2008). The ontogeny of normative development was the focus of the first volume in his trilogy (Bowlby, 1969/1982) and of early attachment research (Hazan et al., 2004). Bowlby also proposed the importance of the attachment system throughout the lifespan with romantic partners becoming primary attachment figures in adulthood (Ainsworth, 1989; Bowlby, 1979).

Most of the empirical work understanding attachment beyond infancy has focused on understanding individual differences in adulthood rather than the development of normative adult attachment (Hazan et al., 2004; Kerns, Tomich, & Kim, 2006). There is growing consensus for research that identifies normative attachment phenomena in adulthood (Fraley & Shaver, 2000; Marvin & Britner, 2008). Researchers have since begun to address this imbalance in the adult attachment literature by documenting the formation of attachment in adulthood, and identifying attachment markers that best represent the reorganization of attachment (Hazan et al., 2004).

3.4.6.1 Hazan and Zeifman's (1994) "Who Do You Turn To?" Interview

Hazan and Zeifman (1994) were the first theorists to document the normative development of attachment beyond infancy. Postulating functional and psychological equivalence of the attachment behaviors in adulthood as observed in infancy, Hazan and Zeifman created the "Who Do You Turn To" (WHO-TO) interview that asked

respondents to name the principal target used for each attachment function of Proximity-seeking, Safe Haven, Separation Protest, and Secure Base.

Developmental differences in targets of attachment were observed in their sample of children and adolescents, with all subjects preferring peers to parents for Proximity-seeking by late childhood, orienting towards peers for Safe Haven between 8 and 14 years of age, and using parents as targets of Separation Protest and Secure Base until late adolescence. This developmental pattern in attachment targets was likewise observed in their adult sample with all adults orienting towards peers for Proximity-seeking and Safe Haven, and between parents and peers for Separation Protest and Secure Base. A romantic relationship generally became a “full-blown” attachment only after two years with the romantic partner serving all four attachment functions relative to one-third of shorter relationships. Hazan and Zeifman concluded that attachment reorganization takes place in a sequential fashion from Proximity-seeking to Secure Base, with attachment bonds only formed with sexual partners in adulthood.

3.4.6.2 Trinke and Bartholomew’s (1997) Attachment Network Questionnaire

To improve upon the limitations of Hazan and Zeifman’s (1994) study, Trinke and Bartholomew (1997) developed the Attachment Network Questionnaire (ANQ). The ANQ is a self-report measure assessing attachment formation using the criteria for an attachment bond (i.e., Safe Haven, Secure Base, Proximity-seeking, emotional tie, and potential object of mourning), and allows respondents to nominate and rank multiple targets for each attachment function. It also distinguishes between desired and actual use of Safe Haven and Secure Base.

Trinke and Bartholomew’s findings replicated the reorganization of attachment functions found by Hazan and Zeifman (1994) with desired and actual use of romantic

partners for Safe Haven and Secure Base increasing with the length of romantic involvement. They also found young adults to report attachment networks approximating ten individuals and an average of 5.38 attachment figures. Romantic partners (if any) were preferred as the primary attachment figure at the top of the attachment hierarchy followed by mothers, fathers, siblings, and best friends. Both the number of attachment figures and the relative order in which individuals used these figures for attachment remained the same regardless of current romantic involvement.

3.4.6.3 Fraley and Davis's (1997) WHO-TO Questionnaire

Around this same time, Fraley and Davis (1997) created a self-report version of Hazan and Zeifman's (1994) measure and asked university students to nominate targets who "best served" Proximity-seeking, Safe Haven, and Secure Base. Identifying the first name for each question as the primary attachment figure for that function and applying a Guttman-scaling method, Fraley and Davis confirmed Hazan and Zeifman's (1994) sequence of attachment reorganization. Undergraduates were most likely to select peers for Proximity-seeking and moderately likely to use peers for Safe Haven, with a majority still using parents for Secure Base. The finding that romantic relationships take approximately two years to become full attachment relationships was replicated, with close friendships exceeding 5.5 years similarly considered as full attachment relationships. Perceptions of peers were found to influence attachment reorientation, with characteristics of trustworthiness, support and caring facilitating the movement of attachment functions from parents to peers.

3.4.6.4 Doherty and Feeney's (2004) Modified Attachment Network Questionnaire

In a more recent study, Doherty and Feeney (2004) examined attachment networks in a large sample of Australian adults between 16 and 90 years old. To address the limitations of previous measures of normative attachment development, Doherty and Feeney combined the optimal features of both the Who-To and the ANQ to create a modified Attachment Network Questionnaire (modified ANQ). The modified ANQ enabled them to determine the number and composition of attachment networks across age ranges, and through allowing respondents to rank multiple targets for each attachment question, the extent to which a target was sought to fulfill all four attachment functions, or attachment strength.

Doherty and Feeney demonstrated the sequential shift from parents to peers of Proximity-seeking to Secure Base with different targets selected for specific attachment needs. Participants reported an average of 9.69 significant relationships with romantic partners, mothers, fathers, siblings, friends and children most commonly reported as attachment figures. More than half of all respondents reported at least two "full-blown" attachments. Highest attachment strength was reported to partners followed by children, friends, mothers, siblings, and fathers in descending order. A majority of respondents demonstrated a preference for a primary attachment figure, with the romantic partner primarily relied upon for all attachment functions. Those in committed romantic relationships displayed weaker attachment to all other relationships. Attachment strength to targets also systematically varied according to normative life events such as increased commitment in the romantic relationship and parental status.

3.4.7 Summary of Advances in Normative Attachment in Adulthood

These four studies provide a representational summary of the theoretical and methodological advances made in research on normative attachment. Normative attachment formation was shown to occur beyond infancy, with individuals creating attachment bonds to both familial (e.g., parents, siblings, and children) and extrafamilial (e.g., friends and romantic partners) figures across the lifespan. Attachment functions were reoriented from parent to peer in a manner analogous to that demonstrated in infancy (Hazan & Zeifman, 1999; Fraley & Davis, 1997). An attachment hierarchy was also established with attachment figures differentiated and fulfilling various attachment functions, while subsisting within an interpersonal context of other attachment relationships (Doherty & Feeney, 2004; Trinke & Bartholomew, 1997). Either a romantic partner or best friend generally replaces the parent as the primary attachment figure by late adolescence or young adulthood (Fraley & Davis, 1997; Trinke & Bartholomew, 1997). However, parents are not relinquished but become attachment figures in reserve as attachment functions are increasingly directed towards peers (Weiss, 1982, 1991).

3.5 Conclusion

Attachment theory is a useful conceptual framework for integrating theory and research findings regarding personality development, interpersonal relationships, and identity formation into a coherent amalgamation that enhances understanding of psychological development and social functioning across the lifespan (Arbona & Power, 2003). It provides a developmental perspective on the ongoing importance of interpersonal relationships for psychological wellbeing (Bretherton & Munholland,

2008). Further, it offers a methodological approach for defining and measuring interpersonal relationships throughout the lifespan (Kenny, 1987). Importantly for the current research, attachment theory also emphasizes the distinctiveness of adolescence for the development of interpersonal relationships (Allen, 2008), with attachment relationships proposed to have implications for adolescent psychological health and interpersonal functioning (Kobak et al., 2007).

CHAPTER 4

The Measurement of Adolescent Attachment

4.1 Introduction

Adolescence presents unique challenges for the measurement of individual differences in attachment (Wilkinson & Goh, 2013). Unlike the infant and adult self-report attachment literature, adolescent attachment research has traditionally employed a fundamentally different conceptualization of attachment which is focused on the quality of specific attachment relationships and their impact on adolescent psychosocial functioning (Wilkinson, 2010a). The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) is the most widely employed measure of adolescent attachment and has generated substantial research linking attachment quality and adolescent wellbeing although the pattern of findings has been inconsistent (Wilkinson & Kraljevic, 2004; Wilson & Wilkinson, 2012). The IPPA also has several limitations that reflect some of the fundamental shortcomings of the adolescent attachment literature.

Studies using the more traditional measurement of attachment security or styles have demonstrated moderate continuity of individual differences in attachment security (Allen, McElhaney, Kupermine, & Jodl, 2004; Fraley, 2002b), with individual differences in attachment expectancies linked to differences in adolescent attachment relationships (Collins, Guichard, Ford, & Feeney, 2004; McCormick & Kennedy, 1994). Both parents and peers have been found to be influential for adolescent psychological health (e.g., Allen et al., 2007; Vandell, 2000). This research largely conforms to postulations that early infant-caregiver relationships directly impact

adolescent psychological functioning, and influence subsequent relationships through the development of attachment expectancies and competencies required for successfully establishing subsequent relationships (Furman & Simon, 2004).

The following chapter elaborates the means by which attachment working models are associated with subsequent development and provides an overview of the literature examining individual differences in adolescent attachment and their implications for psychological wellbeing. It also discusses the limitations associated with the traditional methods of assessing adolescent attachment, and highlights the distinctive challenges of measuring attachment in adolescence. Finally, a review of the IPPA and the criticisms levied against it is presented.

4.2 Attachment Working Models and Subsequent Development

Attachment working models are cognitive structures formed through early experiences with caregivers that enable the individual to understand and anticipate the responsiveness and availability of others (Blain, Thompson, & Whiffen, 1993; Bowlby, 1969/1982). Attachment expectancies not only provide a template for future relationships with significant others, but also internal rules for emotion expression and regulation (Bowlby, 1969/1982; Hazan & Shaver, 1994). They affect the cognitive appraisals of interpersonal events (Lee & Hankin, 2009) by directing attention, organization and filtering of new information, and determining the accessibility of past experiences relative to ambiguous social stimuli (Bartholomew & Horowitz, 1991). Built up across infancy into adolescence, attachment models are postulated to influence social relationships and personality development as individuals increasingly behave in ways conforming to their expectations about themselves and others (Bowlby, 1973, 1979).

Attachment expectancies influence subsequent development through their capacity to alter the perceptions and interpretations of new experiences (Overbeek, Vollebergh, Engels, & Meeus, 2003). New experiences are generally assimilated into existing working models such that individuals with different attachment styles hold different beliefs about themselves and others, the social world, and their experiences of close relationships (Collins & Read, 1990). Attachment models formed during infancy can persist throughout the individual's lifespan and generalize to relationships with significant others (Bartholomew & Shaver, 1998). Attachment expectancies are considered the main source of continuity between attachment experiences in infancy and attachment in adolescence and adulthood, and remain integral for psychological and emotional adjustment beyond childhood (Bretherton, 1985).

These attachment models are not impervious to change but constantly open to revision in future relationships with significant others (Doyle, Lawford, & Markiewicz, 2009). By late adolescence, interpersonal relationships formed with others (e.g., friends and romantic partners) could improve or undermine early internal working models, thereby providing alternative or competing attachment models (Greenberger & McLaughlin, 1998; Mikulincer & Shaver, 2005). Individuals have multiple attachment representations (Klohn, Weller, Luo, & Choe, 2005; Mikulincer & Shaver, 2003) and both early parental attachment models and current attachment to extra-parental figures may contribute to an understanding of adolescent wellbeing (Greenberger & McLaughlin, 1998). Attachment relationships are particularly pertinent for understanding psychological health in adolescence as this is when individuals begin to consolidate cognitions and expectations of the world (Kaslow, Adamson, & Collins, 2000).

4.3 Individual Differences in Attachment Models and Adolescent Adjustment

Two different methodological approaches have generally been implemented to investigate the link between individual differences in attachment models and adolescent adjustment. The first approach, mainly advocated by clinical and developmental psychologists, formally assesses attachment security in adolescence as a characteristic of an internal state of mind rather than a feature of a particular relationship (Main & Goldwyn, 1998). This “attachment state of mind” is purportedly reflected in the adolescent’s narrative and appraisal of experiences in close relationships using interview methods such as the AAI (Hesse, 1999).

The second approach, adopted by social and personality psychologists, proposes that attachment models are expressed in the conscious beliefs and attributions adolescents make of themselves and their relationships (Crowell et al., 2008), with self-reports (e.g., RQ and the ECR) assessing attachment-related thoughts, feelings and behaviors regarding a specific attachment relationship (Bottonari, Roberts, Kelly, Kashdan, & Ciesla, 2007). Research generated using both approaches has provided empirical support for Bowlby’s theory about attachment models and their implications for adolescent psychosocial functioning.

4.3.1 General Attachment Models and Adolescent Adjustment

Aligned with postulations that attachment working models determine the cognitions, affect and behaviors in relationships, guide emotional regulation, and shape self-image (Bowlby, 1973; Bretherton & Munholland, 2008), studies investigating either individual differences in attachment security or general attachment expectancies have found adolescents with secure attachment to report the best psychosocial outcomes. Secure

adolescents reported parent and peer relationships of higher quality with those endorsing a positive model of self (i.e., Secure and Dismissing styles) exhibiting more self-competence and self-liking than adolescents with a negative model of self (i.e., Preoccupied and Fearful styles) (Wilkinson & Parry, 2004). Higher levels of attachment anxiety and avoidance predicted greater anxiety and depression among adolescents, with dysfunctional attitudes and low self-esteem mediating the association between anxious attachment and internalizing symptoms (Lee & Hankin, 2009).

Attachment security in middle adolescence predicted higher peer competence and lower levels of internalizing behaviors and delinquency, with an insecure-preoccupied attachment exhibiting increased internalizing and deviant behaviors (Allen, Moore, Kupermine, & Bell, 1998; Allen et al., 2002). The insecure-preoccupied attachment style was more strongly linked to affective disorders than other types of insecurity (Chango, McElhaney, & Allen, 2009; Kobak, Sudler, & Gamble, 1991) whilst adolescents categorized as dismissing were likelier to display conduct disorders and criminal behaviors (Allen, Hauser, & Borman-Spurrell, 1996; Rosentain & Horowitz, 1996). Insecure attachment models, particularly preoccupied attachment, appear to have significant detrimental effects on how adolescents regulate emotions and behaviors, and organize and appraise peer relationships (Cassidy, 2001; Larose & Bernier, 2001; Zimmermann, 2004).

4.3.2 Attachment Models of Parents and Adolescent Adjustment

Research has also demonstrated the predictive capacity of early attachment security and the influence of current attachment to parents for adolescent adjustment (Allen et al., 2007). Infant attachment security predicted psychological health, emotional regulation, and interpersonal functioning in adolescence (Warren, Huston, Egeland, &

Sroufe, 1997; Collins & Sroufe, 1999) with attachment security to parents continuing to influence adjustment when assessed at different ages of adolescence (Allen, Hauser, Bell, & O'Connor, 1994; Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Allen et al., 2002; Zimmermann & Becker-Stoll, 2002). Adolescents with secure attachment representations reported greater coping skills and lower levels of stress in relationships with parents, friends and romantic partners at adolescence and aged 21 years (Seiffge-Krenke, 2006).

Continuity between retrospective and current models of attachment to parents was also demonstrated, with current parental attachment influencing adolescent wellbeing and adolescents' perceptions of both themselves and parents (McCormick & Kennedy, 1994). Insecure attachment to parents predicted greater depression, anxiety, and worry in both early adolescence (Doyle, Brendgen, Markiewicz, & Kamkar, 2003) and late adolescence (Vivona, 2000). Parents remain important attachment figures during adolescence, and continue to influence adjustment and interpersonal functioning even until young adulthood (Allen, 2008; Allen & Land, 1999).

4.3.3 Attachment Models of Peers and Adolescent Adjustment

Parents are, however, not the only source of attachment with peer relationships (e.g., friends and romantic partners) found influential for adolescent psychosocial functioning (Vandell, 2000). Adolescents securely attached to their friends reported less anxiety and depression and higher quality friendships than adolescents with insecure attachment styles (Nelis & Rae, 2009; Muris, Meesters, Van Melick, & Zwambag, 2001). Differences in social skills have been demonstrated with college students endorsing either secure or ambivalent attachment styles reporting more self-disclosure to same-sex friends than did those with an avoidant attachment style (Mikulincer & Nachson, 1991).

In turn, insecure attachment to romantic partners uniquely predicted depression in late adolescence, with the relationship between attachment and depression completely mediated by negative attributions and ruminations (Margolese, Markiewicz, & Doyle, 2005). Deficits in social competencies were also demonstrated with poor social efficacy and poor self-disclosure mediating the link between attachment anxiety and subsequent depression, and between attachment avoidance and subsequent depression, respectively (Wei, Russell, & Zakalik, 2005).

These studies provide evidence that adolescents form attachment models of their peers who likewise impact upon their psychological wellbeing (e.g., Margolese et al., 2005; Muris et al., 2001). Akin to findings in the adult attachment literature, adolescents insecurely attached to their peers demonstrate distinct deficits and patterns in their interpersonal functioning which subsequently contribute to negative psychological outcomes (Bartholomew & Horowitz, 1991; Mikulincer & Nachson, 1991; Wei et al., 2005).

4.3.4 Summary of Individual Differences in Attachment Models and Adolescent Adjustment

In sum, research conducted using retrospective accounts of attachment security and current models of attachment has demonstrated individual differences in attachment working models to have varying influences on adolescent adjustment (Shaver & Mikulincer, 2002). Parents remain influential for adolescent functioning and significantly impact on adolescents' capacity to form peer relationships (Allen & Land, 1999; Kerns, Contreras, & Neal-Barnett, 2000). Peers, such as friends and romantic partners, can become sources of attachment in adolescence and predict adolescent wellbeing (Margolese et al., 2005; Muris et al., 2001). Attachment models to parents

and peers comprise related yet distinct representations of adolescent attachment (Furman, Simon, Shaffer, & Bouchee, 2002) that may contribute differentially to adolescent adjustment (Greenberger & McLaughlin, 1998; Klohnen et al., 2005).

4.3.5 Criticisms of Traditional Methods for Assessing Attachment Models

There is growing evidence that these two traditional methods for assessing internal working models have little overlap and are not interchangeable (Crowell, Fraley, & Shaver, 1999; Roisman et al., 2007). Firstly, they may be measuring conceptually different aspects of attachment expectancies that might not have similar correlates (Mayseless & Scharf, 2007; Roisman et al., 2007). Internal states of mind appear reflective of a more general and global attachment model as it relates to the accessing and processing of attachment-related information, or as recently proposed, the strategies for emotional regulation within interpersonal relationships (Allen & Miga, 2010; Spangler & Zimmermann, 1999). By contrast, self-reported attachment styles and dimensions appear to reflect cognitions, feelings and beliefs specific to a particular relationship (Shomaker & Furman, 2009; Mayseless & Scharf, 2007).

Secondly, state of mind with regard to attachment assesses the less conscious aspects of attachment models through the coherence and discourse of the individual's narratives without evaluation of the attachment relationship (Hesse, 1999; Roisman et al., 2007). On the other hand, attachment styles and dimensions tap aspects of attachment expectancies within the individual's awareness that are consciously appraised and evaluated (N. L. Collins, 1996; Crowell et al., 2008).

Thirdly, different domains are assessed whereby the clinical/developmental tradition has focused on attachment working models regarding parents and the social/personality tradition has focused on current internal models held relative to a variety of significant

relationships, especially romantic relationships (Shomaker & Furman, 2009; Mayseless & Scharf, 2007). Self-reports examining close relationships in general may reflect a less specific model of attachment compared to interviews based on narratives of interactions with parents (Mayseless & Scharf, 2007).

The aforementioned differences are especially noteworthy given the weak association ($r = .09$) between both assessment methods (Roisman et al., 2007). Attachment security to parents, and not attachment styles regarding parents, was associated with qualities of friendship interactions when measured in tandem (Shomaker & Furman, 2009). Although when predicting aspects of close relationship functioning, measures of attachment security and attachment styles do not necessarily predict the same outcomes in identical ways (Crowell et al., 2008).

Identifying aspects of the attachment representational network under study at any particular time is important (Shaver, Collins, & Clark, 1996). Attachment to mothers and romantic partners were found to influence undergraduate adjustment independently of attachment anxiety and avoidance despite general attachment models being the strongest predictors of wellbeing (Klohn et al., 2005). There were only low to moderate correlations between adolescents' models of self and other relative to mothers, fathers, best friends, and romantic partners, wherein insecure attachment to the latter and for girls only, to mothers, uniquely predicted depression (Margolese et al., 2005). It is essential when studying individual differences in adolescent attachment to not only determine which aspect of internal working models is conceptually relevant but also assess attachment models across multiple relationship domains (Crowell et al., 2008).

4.4 The Challenge of Measuring Adolescent Attachment

Adolescence is a period of profound transformations for the emotional, cognitive, and behavioral systems surrounding attachment (Allen, 2008). It is a critical period for social development involving individuation from parents, the expansion of peer networks, growing importance of close friendships, and the development of romantic relationships (La Greca & Harrison, 2005; Heaven, 2001; Nurmi, 2004). Both the evolving nature of adolescence and changes in attachment relationships present conceptual and methodological challenges in using either parents or peers as a reference point when assessing attachment models (Feeney et al., 1994).

4.4.1 Attachment Reorganization in Adolescence

Adolescence poses unique challenges for measuring attachment relative to psychological wellbeing because attachment networks expand during this period to incorporate extrafamilial members and attachment orientations begin to change (Hazan & Zeifman, 1994; Wilkinson, 2006b). Presumably a parental figure, usually the mother, remains the primary attachment figure until young adulthood (Bowlby, 1969/1982), but adolescents also commence diverting attachment-related needs towards peers and decreasing reliance upon parents as attachment figures (Allen, 2008; Allen & Land, 1999). This process of attachment reorganization occurs over the developmental span of adolescence, with the composition and structure of adolescents' attachment hierarchies changing from early adolescence to young adulthood (Rosenthal & Kobak, 2010).

Peers become increasingly influential for adolescent adjustment as they attain growing importance as attachment figures in the adolescent's attachment hierarchy (Laible, Carlo, & Raffaelli, 2000). Initially used as "ad hoc" attachment figures, close

friends and romantic partners are increasingly viewed as better able to meet other attachment needs as confidence in their availability and responsiveness grows (Nickerson & Nagle, 2005; Waters & Cummings, 2000). Parents remain consistent sources of security, with mothers especially occupying a unique position in the attachment hierarchy throughout adolescence and young adulthood (Fraley & Davis, 1997; Trinke & Bartholomew, 1997). Therefore, multiple attachment relationships within and outside the family need to be accounted for (Thompson, 2000) when investigating adolescent adjustment.

4.4.2 Gender Differences in Adolescence

Gender is an important variable for understanding attachment and adjustment in adolescence (Operario, Tschann, Flores, & Bridges, 2006; Werner & Silbereisen, 2003). As a social and cognitive construct, gender influences development across the lifespan (Cole et al., 2001) and is responsible for adolescents' different perceptions of parent and peer attachments following puberty (Bowlby, 1969/1982). Gender of the adolescent and of the parents both purportedly influence the degree to which specific attachment relationships change over time (Paikoff & Brooks-Gunn, 1991).

The research examining gender differences in adolescent attachment to parents has been mixed (Nickerson & Nagle, 2005), and any differences found are inconsistent in the literature (De Goede et al., 2009b). Research has shown either adolescent females (e.g., Kenny, 1994; Kenny & Donaldson, 1991) or males (e.g., Arbona & Power, 2003) to report higher parental attachment with some studies finding a "sex allegiance" effect whereby same-sex attachment relationships are of higher quality than opposite-sex relationships (e.g., Buist, Dekovic, Meeus, & Van Aken, 2002; Lieberman, Doyle, & Markiewicz, 1999; Wilkinson, 2006b). However, adolescent females generally reported higher peer attachment than adolescent males (Nada Raja, McGee, & Stanton, 1992;

Nickerson & Nagle, 2005) with attachment security and peer relationships more important for the wellbeing and identity formation of the former (Hay & Ashman, 2003; Kenny & Donaldson, 1992).

Gender differences in attachment appear to vary according to the specific attachment relationship and the relationship aspect being analyzed (Noack & Buhl, 2005).

Therefore, gender differences are important to consider despite inconsistencies regarding the exact nature of these differences (De Goede et al., 2009b; Nickerson & Nagle, 2005). Gender differences have not generally been assessed in relation to the broader and developing attachment network of adolescents (Wilkinson, 2006b).

Differences in level of parental support as a function of gender and age were previously documented (De Goede et al., 2009b), and thus enhanced insight into adolescent attachment and adjustment requires a consideration of gender differences within multiple attachment relationships across adolescence.

4.4.3 Quality of Attachment in Adolescence

There is a negotiated balance between the endeavor for autonomy and individuation and a transformed but continued connection with significant others during adolescence (Baltes & Silverberg, 1994; Moretti & Holland, 2003). Attachment relationships undergo important transformations in adolescence (Connolly et al., 1999) with changes reflected in the quality of the relationships (Macek & Jezek, 2007). The quality of interpersonal relationships is crucial to successfully traversing this developmental task (Laible et al., 2000) and suggestions have been made that the development of attachment in adolescence (and its implications for psychological health) may more fruitfully be explored using specific attachment relationship rather than attachment working models (Buist et al., 2002). Consequently, most adolescent attachment research

has focused on measuring individual differences in the quality of attachment relationships (e.g., Armsden & Greenberg, 1987; Nada Raja et al., 1992; Meeus, Oosterwegel, & Vollebergh, 2002) and not attachment security or taxonomies as traditionally assessed in the infant and adult attachment literature.

4.5 The Quality of Attachment Relationships and Adolescent Adjustment

The Inventory of Parent and Peer Attachment and its many variants are the most frequently cited self-report measure of adolescent attachment relationships (Wilkinson & Goh, 2013; Wilson & Wilkinson, 2007). Its popularity is due to the established tradition in the adolescent attachment research of explaining the impact of attachment relationships on adolescent wellbeing, with the IPPA shown to reliably predict adolescent adjustment outcomes (Wilkinson, 2008; Wilson & Wilkinson, 2012)

4.5.1 The Inventory of Parent and Peer Attachment

The IPPA was specifically designed to measure the affective and cognitive aspects of attachment and its relationship to psychological health in adolescents. Armsden and Greenberg (1987) hypothesized that the internal working models of adolescents could be assessed by measuring the feelings of trust, level of communication, and feelings of alienation towards attachment figures, that is, the quality of the attachment relationship. Creating separate scales for parents and peers, Armsden and Greenberg found parental relationships related to adolescent depression and life satisfaction, and peer attachment to self-esteem. They postulated parental attachment was more important than peer attachment for adolescent wellbeing. Based on their original findings, Armsden and

Greenberg concluded that the IPPA was a reliable measure of perceived quality of attachment relationships in late adolescence.

4.5.2 Parental and Peer Influences on Adolescent Adjustment

Since its inception, the IPPA has been widely employed to assess the influence of attachment relationships on a variety of adolescent outcomes (Wilkinson, 2010a). Whereas research has indicated the importance of parent attachment for adolescent psychological health (e.g., Laible et al., 2000; Ma & Huebner, 2008; Nada Raja et al., 1992), the findings regarding the influence of peer attachment on adolescent adjustment (e.g., Cotterell, 1992; Fass & Tubman, 2002; Paterson, Pryor, & Field, 1995) has been inconsistent (Wilkinson, 2004; Wilkinson & Walford, 2001). Peer attachment has been argued to only be indirectly implicated in adolescent adjustment through its association with social competence and self-concept constructs (Dekovic & Meeus, 1997; Paterson et al., 1995). In other studies, self-esteem mediated the relationships between peer attachment and psychological health, depression, and social anxiety (Bosacki, Dane, Marini, & YLC-CURA, 2007; Wilkinson & Walford, 2001; Wilkinson, 2004). Further, peer attachment is correlated more highly with social competence and deviant behaviors than self-esteem, wherein the relationship between peer attachment and self-esteem was mediated by indicators of autonomy and attachment (Noom, Dekovic, & Meeus, 1999).

Research examining parental and peer attachments simultaneously have shown inconsistent support for their relative influences on adolescent wellbeing. Whereas some studies found parental and peer attachment to have similar influences on anxiety, depression, self-esteem, and academic performance (Fass & Tubman, 2002; Wilkinson & Kraljevic, 2004), others have found peer attachment as more influential than parent attachment for self-esteem and self-concept (Cotterell, 1992). Adolescents high in peer

attachment but low in parental attachment were considered better adjusted than adolescents high in parental attachment but low in peer attachment (Laible et al., 2000). The opposite was also demonstrated whereby high levels of peer attachment did not compensate for low levels of parental attachment (Nada Raja et al., 1992). It was the quality of attachment to parents, and not peers, which predicted increased wellbeing (Greenberg, Siegal, & Leitch, 1983) and life satisfaction (Ma & Huebner, 2008), with parent attachment, unlike peer attachment, directly influential for self-esteem (Laible, Carlo, & Roesch, 2004).

Collectively, the considerable literature using the IPPA has shown both parental and peer attachment relationships to influence adolescent psychological outcomes (Laible et al., 2000). The inconsistency in the literature lies in the relative importance of parent and peer attachment relationships for various adjustment variables (Helsen et al., 2000). This inconsistency could partially be due to the different psychological outcomes assessed, making imperative the need for multiple indices of adolescent adjustment when examining the influence of attachment relationships (Cooper, Albino, Orcutt, & Williams, 2004; Wilkinson, 2004).

4.5.3 Criticisms of the IPPA

The IPPA has been shown to be a reliable instrument in predicting adolescent adjustment but has several major shortcomings that have been noted in the literature (e.g., Brennan et al., 1998; McElhaney et al., 2009; Wilkinson, 2008; Wilkinson, 2010a; Wilson & Wilkinson, 2012).

4.5.3.1 Non-specificity Between Different Attachment Relationships

By deliberately choosing not to discriminate between mother attachment and father attachment or between different kinds of peer relationships, the wording of the original IPPA leads to ambiguity in identifying the source of the attachment relationship (Wilkinson, 2008). This is problematic as attachment relationships are dyadic in nature with specific reference made to a particular type of relationship or individual (Wilson & Wilkinson, 2012). Furthermore, the nature and quality of relationships has been shown to differ between attachment figures (La Guardia, Ryan, Couchman, & Deci, 2000).

Parents

With regards to parent attachment, research has indicated that an individual can be securely attached to one parent and insecurely attached to the other parent (Bretherton, 1985; Collins & Read, 1994). Higher attachment to mothers has generally been reported throughout childhood and adolescence (Freeman & Brown, 2001; Haigler, Day, & Marshall, 1995), although father attachment may be more important in various contexts (Ma & Huebner, 2008; Suess, Grossman, & Sroufe, 1992).

Individual differences in the quality of attachment to mothers and to fathers can vary and result in different developmental outcomes (Cook, 2000; Youniss & Smollar, 1985). Maternal attachment was found more influential for peer attachment, the quality of peer relationships and acceptance by peers (Kerns, Klepac, & Cole, 1996; Markiewicz, Doyle, & Brendgen, 2001). In turn, paternal attachment more strongly predicted problem-solving capacity (Easterbrook & Goldberg, 1984), social competency, adjustment and efficacy (Rice, Cunningham, & Young, 1997), and interpersonal cognition in peer interactions (Zimmermann, 2004). A “sex allegiance” effect has sometimes also been reported (Wilkinson, 2006b). Measuring parental

attachment based solely on the more influential parent may not accurately reflect the importance that both parents may have on various indices of adolescent psychosocial functioning.

Peers

The construction of the IPPA Peer scale indicates it is more likely a measure of the quality of peer clique relationships (Brown & Klute, 2003) rather than the relationship with a ‘best friend’ (Wilkinson, 2010a). Adolescents operate differently in a chumship, in best friendships, in their peer group, and with their classmates (Degirmencioglu et al., 1998). As such, intimate friendships are argued to be more similar to relationships with parents or romantic partners than to the broad peer group (Schneider, Atkinson, & Tardif, 2001).

Close friendships are exclusive dyads postulated to involve attachment processes (Ainsworth, 1989; Bowlby, 1988) and essential to the development of interpersonal intimacy, empathy and perspective-taking (Hartup, 1996; Prinstein, Boergers, & Vernberg, 2001). A high quality friendship may even lessen the harmful effects of low peer acceptance (Buhrmester, 1990; Sullivan, 1953). Conversely, group-level peer relationships involve affiliative processes where support and acceptance are paramount (Harter, 1998) but attachment needs are not directly addressed (Wilkinson, 2006b). Peer group affiliations are important for self-identity, social support, friendship development, and the facilitation of social interactions (Brown, Eicher, & Petrie, 1986).

Dyadic friendships and group-level peer relationships are empirically and theoretically distinct (Wilkinson, 2006b) and can differentially impact psychosocial adjustment (e.g., Brown & Klute, 2003; Rubin et al., 2006; Wilkinson & Kraljevic, 2004). By specifically referring to interactions with “friends”, the IPPA Peer scale potentially biases responses and measures something more general or distinct to

attachment (McCarthy, Moller, & Fouladi, 2001) should adolescents base their replies on general interactions with friends or reflect on different friends for various questions (Wilkinson, 2010a).

4.5.3.2 Omission of Adolescent Romantic Relationships

Another shortcoming of the IPPA is its failure to address the developmental significance of adolescent romantic relationships (Furman & Shaffer, 2003).

Theoretically considered a subgroup of peer relationships (Connolly, Craig, Goldberg, & Pepler, 1999; Feiring, 1996), romantic relationships are a key developmental task of adolescence (Furman & Wehner, 1997), and an important part of the adolescent self-concept (Connolly & Konarski, 1994). The functions of romantic relationships evolve throughout adolescence and their primary purposes include status, recreation, identity formation and autonomy from parents in early and middle adolescence (Brown, 1999), but care and commitment in late adolescence (Shulman & Kipnis, 2001).

Whereas some research established negative associations between romantic involvement and adolescent adjustment (e.g., Davila, Steinberg, Kachadourian, Cobb, & Fincham, 2004; Joyner & Udry, 2000; Zimmer-Gembeck et al., 2001), others have provided evidence to the contrary (e.g., Connolly et al., 2000; Kuttler & La Greca, 2004; Paul, Poole, & Jakubowyc, 1998). Additionally, some studies (e.g., Brendgen et al., 2002; Overbeek et al., 2003) and not others (e.g., McMahon & Wilkinson, 2004) have found romantic relationships to moderate the influences of parent and peer attachment on adolescent wellbeing.

The research findings have been inconsistent but the evidence available indicates that romantic relationships can influence adolescent adjustment and may actually supplant existing attachment relationships in predicting adolescent psychological health

(Brendgen et al., 2002; Overbeek et al., 2003). The ambiguity of the IPPA peer scale is such that romantic partners could be referenced as peers, whereby assessing for the presence of a romantic relationship would avoid this confusion. Understanding the influence of romantic relationships on adolescent adjustment and other interpersonal relationships would further insight into the multifaceted nature of attachment in adolescence.

4.5.3.3 Psychometric Properties of the IPPA

The development and initial psychometric validation of the IPPA is also problematic. The IPPA was developed and normed on 179 US college students aged between 16 and 20 years, most of whom (75%) were living away from home (Armsden & Greenberg, 1987). Living away from home is a significant life event marking the transition into adulthood (Dubas & Petersen, 1996) with potential repercussions for psychological health (Larose & Boivin, 1998; Wintre & Yaffe, 2000). Leaving home entails changes in relationships with parents and the developmental of other relationships, some of which will supersede parent attachment relationships (Mayseless, 2004). Thus, the generalizability of the IPPA to younger adolescents who would mostly be living with their families is questionable (Wilson & Wilkinson, 2012).

Importantly, critics have concluded that the IPPA measures the general affective quality of attachment relationships which is a construct related to but distinct from attachment (Heiss, Berman, & Sperling, 1996). Hyperactivation (anxiety) and deactivation (avoidance) are important to consider in the measurement of attachment constructs (Shaver & Mikulincer, 2002) as they purportedly underlie all scale-based and categorical self-report attachment measures (Brennan et al., 1998; Fraley, Waller et al., 2000; Mikulincer & Shaver, 2007). Brennan and her colleagues (1998) could not replicate the original factor structure of the IPPA and noted that the IPPA may be

deficient in assessing attachment anxiety, a conclusion likewise reached by Mikulincer and Shaver (2007). Consequently, the IPPA is not considered a measure of attachment working models by many prominent researchers, but rather a general assessment of the current quality of the parent-adolescent relationship without particular reference to attachment-relevant constructs (McElhaney et al., 2009).

4.5.3.4 Summary of Criticisms of the IPPA

The criticisms levied against the IPPA demonstrate some of the fundamental shortcomings in the adolescent attachment literature. Firstly, adolescents have multiple attachment figures, thus subsuming mothers and fathers into the category of parent, and not distinguishing between different peer relationships fails to tease apart the separate influences of each figure for adolescent adjustment (Wilkinson, 2010a; Wilson & Wilkinson, 2012).

Secondly, adolescence is a critical period of development with the nature of interpersonal relationships and their corresponding influences on adolescent adjustment changing to reflect these psychological, biological, cognitive and interpersonal transformations (Allen, 2008; Buist et al., 2002; Doyle et al., 2009; La Guardia et al., 2000; Lieberman et al., 1999). The need to examine adolescent attachment and adjustment over the entirety of adolescence is further accentuated by the criticism regarding the validity of the IPPA with adolescents (Wilson & Wilkinson, 2012).

Finally, it is important to examine internal working models when assessing adolescent attachment. Majority of the literature assessing adolescent attachment and psychological health have used the IPPA, and there is consensus among many eminent researchers that the IPPA measures the general affective quality of attachment relationships rather than attachment (McElhaney et al., 2009). Therefore, a re-

examination of the known links between adolescent attachment relationships and adjustment is warranted and should be interpreted in light of current understanding of attachment anxiety and avoidance.

4.6 Conclusion

Overall, attachment in adolescence is complicated. Whilst attachment theory provides a framework in which to understand adolescence and adjustment, the research literature generated has been enlightening but often disjointed and fragmented. This relates both to the methodological shortcomings in the current assessment measures of adolescent attachment (Crowell et al., 2008; Mayseless & Scharf, 2007; Roisman et al., 2007), and the failure to account for the interactional effects between attachment figures, gender and stage of adolescence when assessing psychosocial outcomes (Hay & Ashman, 2003). Furthermore, adolescence presents a unique set of challenges for measuring attachment and adjustment owing to the significant biological, cognitive and psychosocial changes carried out successively over the developmental course of adolescence (Elliot & Feldman, 1990).

There are five considerations when investigated simultaneously would provide a greater understanding of the complexities regarding adolescent attachment and its implications for psychosocial functioning. Firstly, attachment working models must be considered as this provides the crucial link between early representations of caregiver-child attachment security and current personality and interpersonal functioning (Bowlby, 1969/1982; Bretherton & Munholland, 2008). More pertinently, the most widely employed measure of adolescent attachment, the IPPA, does not account for attachment hyperactivation and deactivation (Shaver & Mikulincer, 2002).

Unlike infant and adult attachment where there is a clear primary attachment figure, adolescents can have several attachment figures (Friedlmeier & Granqvist, 2006; Trinke & Bartholomew, 1997) and it is imperative to measure their multiple sources of attachment when considering adolescent adjustment. Attachment sources vary in their influences on adolescent adjustment with mothers, fathers, best friends, and romantic partners differentially predicting adjustment outcomes such as depression (Margolese et al., 2005).

Thirdly, adolescents are not a homogenous group and the impact attachment figures have on various indices of psychosocial functioning will depend on the stage of adolescence sampled in studies. Early and late adolescents differ in the quality of attachment and levels of parental support (Buist et al., 2002; De Goede et al., 2009b; Doyle et al., 2009), the breadth of their attachment networks, and the depth of peer relationships cultivated (Collins & Van Dulmen, 2006; Furman & Bierman, 1984). Moreover, dating and romantic relationships become more common from middle adolescence (Connolly et al., 1999; Feiring, 1996), with romantic partners increasingly important as an additional source of attachment (Brendgen et al., 2002; Overbeek et al., 2003).

Fourthly, both the gender of the adolescent and of the attachment target should be considered as gender is important for understanding the association between parental attachment, peer relationships and adolescent psychosocial outcomes (Garfenski & Okma, 1996; Gore, Aseltine, & Colten, 1993; Werner & Silbereisen, 2003). Gender differences have been reported in attachment styles (Allen et al., 2003; West, Rose, Spreng, Sheldon-Keller, & Adam, 1998), levels of attachment (Kenny, 1994; Arbona & Power, 2003), and the quality of attachment over adolescence (Buist et al., 2002). Gender differences regarding parents have also sometimes been demonstrated (Lieberman et al., 1999; Paterson, Field, & Pryor, 1994; Wilkinson, 2006b).

Finally, adolescence can be a stressful time for many youths, with substantial changes in their physical, mental and social identities (Graber, Brooks-Gunn, & Petersen, 1996). The roles that parent and peer relationships have in predicting adolescent adjustment can differ across adolescence depending on the psychological indices being measured at that point in time (Klohnen et al., 2005; Macek & Jezek, 2007; Meeus & Dekovic, 1995). There is still a current confusion regarding the relative influences of parent and peer attachment relationships for adolescent wellbeing despite the extensive literature already conducted (Helsen et al., 2000; Wilkinson & Parry, 2004). Using a variety of adjustment outcomes would help clarify the influence of different attachment relationships on adolescent psychosocial functioning.

In sum, it is believed that investigating (a) attachment working models; (b) multiple sources of attachment; (c) stages of adolescence; (d) gender of adolescent and parent; and (e) multiple psychosocial indicators concurrently will bring about a more comprehensive understanding of adolescent attachment and psychological health. This is the intention of the present dissertation as discussed in the next chapter.

CHAPTER 5

Adolescent Attachment Networks

5.1 Introduction

There is now a third wave of measurement of adolescent attachment which takes into consideration the broader and developing attachment network as individuals move from childhood to adulthood. Understanding adolescent attachment networks is crucial as adolescence is a key period for both the development of attachment relationships beyond the immediate family and the reorientation of attachment functions from parents to peers (Allen, 2008; Weiss, 1982). Using the concept of an attachment network would allow further understanding of who adolescents select for attachment functions, when peer relationships are transformed into attachment bonds, and how adolescents maintain attachment bonds to parents while forming new attachment bonds with peers (Kobak et al., 2007; Rosenthal & Kobak, 2010).

Hazan and Zeifman (1994) were the first theorists to frame this normative developmental perspective and create a method of identifying adolescents' primary attachment figures based on Bowlby's behavior-based definition of attachment (Hazan et al., 2004). Subsequent research has extended their original findings by exploring the role of individual differences in attachment working models (i.e., Friedlmeier & Granqvist, 2006) and identifying the role of specific attachment figures in the attachment hierarchy (i.e., Markiewicz et al., 2006). A review of these three significant studies exploring normative attachment reorganization in adolescence and their limitations are discussed in the present chapter.

5.2 Attachment Reorganization During Adolescence

5.2.1 Structural and Compositional Changes in Attachment Relationships

Predictable changes occur in attachment relationships with development and maturation (Bowlby, 1969/1982). Separations from attachment figures become more tolerable and less distressing, and attachment behaviors assume new forms and targets (Hazan et al., 2006). External, observable interactions in the attachment relationship evolve into internally represented beliefs and expectations where felt security is paramount (Sroufe & Waters, 1977). Changes in the structure and composition of the attachment hierarchy are normative, with romantic partners eventually replacing parents as primary attachment figures by adulthood (Bowlby, 1969/1982).

Adolescent and adult attachment relationships differ in several important ways from attachments between infants and caregivers (Ainsworth, 1989; Bowlby, 1979). Infant-caregiver attachment relationships are unilateral whereby the infant is the sole recipient of care and protection and provides neither in return, while the caregiver's behaviors are regulated by the caregiving system rather than the attachment system (Hazan et al., 2006). By adulthood, attachment relationships are typically more symmetrical relationships established between peers wherein each partner mutually and alternately serves as a provider and recipient of care and protection (Hazan et al., 2004; Hazan et al., 2006). Additionally, these attachment relationships involve the integration of the attachment, sexual and caregiving behavioral systems (Kunze & Shaver, 1994; Shaver, Hazan, & Bradshaw, 1988).

Whereas attachment relationships are generally formed with the primary caregiver and close family members in infancy, individuals begin to form multiple attachments to others outside their family of origin as both the affiliative and sexual systems begin to

have more importance in adolescence (Kobak et al., 2007). The attachment system becomes more differentiated and diversified from this period onwards, with individuals tending to rely on different attachment figures in different contexts rather than one attachment figure for all situations (Mayseless, 2005).

Although Bowlby (1969/1982) postulated that the sexual pair bond is the prototypical instantiation of attachment in adults, research has since established that elements of attachment relationships emerge in close friendships and romantic relationships in adolescence (Fraley & Shaver, 2000). This complicates the understanding of attachment in adolescence as most friendships and romantic relationships in adolescence are not stable enough to provide emotional security (Nomaguchi, 2008) because many are short lived and entirely context specific (Ainsworth, 1989). Further, some, but not all, friendships have an attachment component or constitute enduring affectional bonds (Ainsworth, 1989), and there would inevitably be some adolescents who are not currently involved in a romantic relationship at any given point in time (Campa, Hazan, & Wolfe, 2009).

Bowlby's (1979) writings focused mainly on infancy and childhood, and it was not until Hazan and Shaver's work that a model was developed to explain how attachment relationships are broadened to include peers (Hazan & Shaver, 1994; Nickerson & Nagle, 2005). It was only recently that empirical studies on the process of attachment reorganization were carried out on adolescents beginning with the seminal work of Hazan and Zeifman (1994).

5.2.2 Hazan and Zeifman's (1994) Seminal Study of Attachment Reorganization

Hazan and Zeifman (1994) were the first researchers to investigate adolescent attachment within the normative developmental trajectory of adolescence. Operating

within a developmental framework, they postulated that attachment in adolescence and adulthood was psychologically and functionally analogous to their behavioral manifestations as observed in infancy. They developed the “Who Do You Turn To” (WHO-TO) interview which asked respondents to list one individual whom they would turn to in each of several attachment-related situations, and administered this to a cross-sectional sample aged between 6 and 17 years.

Their results indicated that attachment functions shifted from parents to peers in a sequential order beginning with Proximity-seeking and ending with Secure Base. Whilst their entire sample of children and adolescents demonstrated a preference for peers for Proximity-seeking, respondents between 8 and 14 years old were found to prefer peers over parents for Safe Haven. Parents were used by the majority for Separation Protest and Secure Base even in late adolescence and among those late adolescents who elected a peer for these two attachment functions, the overwhelming majority (83%) reported a romantic partner.

In a subsequent study conducted with adults in romantic relationships, Hazan and Zeifman (1994) also identified that romantic relationships of at least two years in length comprised all four attachment functions in comparison to just one-third of romantic relationships of under two years’ duration. They concluded that new attachment bonds were formed exclusively with romantic partners, and that parents continued to serve attachment needs even in adulthood.

Hazan and Zeifman’s (1994) research was seminal in several regards. They were the first researchers to incorporate multiple sources of attachment (i.e., parents and peers) when investigating attachment in adolescence, and also used a broad age range spanning over the entire period of adolescence (Hazan et al., 2006; Kobak et al., 2007). They demonstrated that adolescents oriented their attachment needs towards different individuals throughout the developmental period of adolescence, and the shifting of

these needs occurred in a sequential fashion according to chronological age (Doherty & Feeney, 2004; Trinke & Bartholomew, 1997). They also established that while romantic partners could become attachment figures by late adolescence, parents were still the primary attachment figures for most and continued to serve as a secure base from which adolescents explored both peer and romantic relationships (Fraley & Davis, 1997; Freeman & Brown, 2001).

Though pioneering, there were several limitations to their study. Firstly, there was minimal methodological information provided, and the sample size of over 100 participants was inadequate for assessing the broad age range of 6 to 17 years old (Markiewicz et al., 2006; Nickerson & Nagle, 2005). Secondly, the WHO-TO interview allowed only one nomination for each attachment function and therefore assessed only the characteristics of primary attachment figures, and not the entire attachment hierarchy (Trinke & Bartholomew, 1997). Thirdly, the dichotomous coding rule used in their study failed to distinguish between different attachment figures, with mothers, fathers, stepparents and grandparents subsumed under the broad categorization of parents, and friends and romantic partners under the heading of peers (Kobak et al., 2007). Finally, Hazan and Zeifman (1994) provided descriptive information on the reorganization of attachment in adolescence, but did not take into consideration other factors that could facilitate or hamper this reorganization such as individual differences in attachment security or the presence of a romantic relationship (Feeney, 2004; Trinke & Bartholomew, 1997). Potential gender differences that could moderate the attachment relationship between the adolescent and the attachment figure or influence the composition and structure of the adolescent attachment hierarchy were also not accounted for (Markiewicz et al., 2006).

5.2.3 Individual Differences in Attachment Models and Attachment

Reorganization

One of these limitations – that of individual differences in attachment working models- has since been addressed in a study conducted by Friedlmeier and Granqvist (2006). Seeking to expand upon the original findings by Hazan and Zeifman (1994), Friedlmeier and Granqvist investigated the concurrent influences of previous attachment security with both mothers and fathers, and current attachment orientation to peers (i.e., friends and romantic partners) on the rate of attachment reorganization in a cross-national sample of 349 German and Swedish adolescents aged 15 to 16 years. In addition, they examined the impact of romantic relationship status on the process of attachment reorientation over a period of 12 to 15 months.

For their study, Friedlmeier and Granqvist (2006) employed a revised self-report version of the WHO-TO (Fraley & Davis, 1997) which assessed primary attachment figures for the attachment functions of Proximity-seeking, Safe Haven and Secure Base, and circumscribed the nomination of parents to mothers and fathers only, and the nomination of peers to friends and romantic partners. A Guttman-scaling method was utilized to determine if attachment reorganization occurred in a stepwise manner as postulated by Hazan and Zeifman (1994).

Cross-sectional support for the sequential movement of attachment functions from parents to peers was demonstrated, with the majority of adolescents choosing peers and parents for Proximity-seeking and Secure Base respectively, and approximately half turning to either peer or parent for Safe Haven. This stepwise process of attachment reorganization was however not demonstrated in prospective analyses, with longitudinal data indicating that only 38% of changes in attachment reorganization operated in the predicted direction (i.e., from parent to peer).

Individual differences in attachment history with mothers only and current attachment orientation were found to influence the rate of attachment reorganization. Specifically, the combination of high attachment insecurity to mothers and high attachment avoidance predicted lower prospective shifts of attachment to peers whilst the combination of high insecurity with mothers and high attachment anxiety resulted in higher prospective reorientation of attachment needs from parents to peers.

Friedlmeier and Granqvist (2006) also established that romantic relationships facilitated the movement of attachment needs from parents to peers. They found that adolescents in a romantic relationship at the first time of assessment already indicated greater orientation towards peers for attachment needs. Likewise, adolescents who formed romantic relationships between the two assessments demonstrated higher rates of reorganization compared to adolescents who did not. This increased rate of attachment reorganization occurred in addition to the normative movement of attachment needs demonstrated by all the adolescents in their study.

The findings by Friedlmeier and Granqvist (2006) are noteworthy as they were the first researchers to employ a longitudinal design in examining the reorganization of attachment from parents to peers. Their results indicated that the sequential shift of attachment functions was not fully supported in longitudinal analyses and this finding awaits future replication. Moreover, they were the first to measure the influences of both previous attachment history to parents and current attachment orientation to peers on the rate of attachment reorganization, and found current attachment orientation to be the better indicator of change. They also demonstrated that the presence of a romantic relationship facilitated the process of attachment reorganization (Connolly & Johnson, 1996; Feeney, 2004).

Despite these interesting findings, Friedlmeier and Granqvist (2006) highlighted several limitations pertaining to the generalizability of their research. Firstly, only

middle adolescents were assessed for their study and further research examining a broader age range of adolescence is required. Secondly, they did not assess adolescent attachment networks but rather just primary attachment figures that were either a parent or a peer, and did not identify attachment to each figure separately (Pitman & Scharfe, 2010). Thirdly, current attachment orientation was assessed in relation to both friends and romantic partners, and thus the effect size for romantic relationship status on attachment reorganization was probably underestimated. Fourthly, they did not distinguish between existing romantic relationships and newly formed relationships for the group of adolescents who were romantically attached at both points of assessment.

5.2.4 Age, Sex, and Romantic Status Differences in Attachment Reorganization

Around this same time, Markiewicz and her colleagues (2006) conducted a study that attempted to replicate Hazan and Zeifman's (1994) results using a large, cross-sectional sample of 682 participants categorized into three age ranges of young adolescents, middle adolescents, and young adults. Their study expanded upon the original findings by addressing individual differences in attachment security to mothers, examining mothers, fathers, best friends, and romantic partners separately as attachment figures, and by exploring gender and romantic relationship status as potential moderators. Like Friedlmeier and Granqvist (2006), Markiewicz and her colleagues employed the revised self-report version of the WHO-TO and requested participants to choose one person from the following list of "mother, father, best friend, girlfriend/boyfriend, yourself, or other" for each of the attachment functions.

Overall, Markiewicz and her colleagues (2006) demonstrated developmental differences in the use of mothers, fathers, best friends and romantic partners for attachment needs, wherein the extent to which each attachment figure was used varied

according to attachment function, age, gender, and romantic relationship status. Mothers remained an important source of security for all adolescents irrespective of relationship status, and were consistently used more than fathers or peers for Secure Base. They were, however, turned to significantly less for Proximity-seeking and Safe Haven by the two older groups of participants, and less for Proximity-seeking and Secure Base by adolescents with romantic partners.

Best friends were used most and more than others for Safe Haven, but selected less by young adults than young adolescents and also by middle adolescents with romantic partners. By contrast, young adolescents used best friends significantly more for Secure Base compared with the two older groups, and adolescents without romantic partners relied more on best friends for both Proximity-seeking and Safe Haven than did adolescents in romantic relationships.

Romantic partners were chosen more for all functions by the two older age groups than young adolescents, and selected more for Safe Haven with each successive older age group. Amongst young adults, romantic partners were used most for Proximity-seeking and similarly to best friends for Safe Haven.

Finally, fathers were selected least as an attachment figure by all three age groups and when used, served as a secure base. Fathers were chosen significantly more by young adolescents for Proximity-seeking, and were used more by males than females, particularly for Safe Haven.

Attachment security to mothers was found to only predict the extent to which mothers and romantic partners were chosen for attachment functions. Adolescents insecurely attached to mothers used mothers significantly less than those who were securely attached to her, especially for Secure Base. Attachment insecurity with mothers also predicted increased use of the romantic partner especially if there was an existing romantic relationship. Young adults who reported attachment insecurity with mothers

turned to romantic partners significantly more for Safe Haven and Secure Base whilst middle adolescents used their romantic partners more for Proximity-seeking than Safe Haven or Secure Base regardless of attachment security

This study by Markiewicz and her colleagues (2006) represents an important extension of Hazan and Zeifman's (1994) research as it was the first study to investigate attachment reorganization by examining attachment strength to different attachment figures separately over the entire span of adolescence. Using large sample sizes for each of the age groups assessed, they found that adolescents turned to different attachment figures for specific attachment needs, and that this varied according to both age and the attachment function. Further, they were the first to explore the moderating influences of gender and found that mothers were used more as attachment figures than fathers, and that adolescent males turned more to fathers and females more to friends, especially for Safe Haven. Markiewicz and her colleagues also demonstrated that both romantic relationship status and individual differences in attachment security to mothers predicted the extent to which adolescents turned to their romantic partners for attachment needs, particularly if they were insecurely attached to their mothers. Their study was thus the first to examine age, gender, romantic relationship status and attachment security concurrently, and future studies are required to validate their results.

Their findings are limited in that attachment strength to romantic partners was averaged across all participants, including adolescents who were not in a romantic relationship. This effectively diluted the strength of attachment to romantic partners. Moreover, Markiewicz and her colleagues (2006) only assessed individual differences in attachment security to mothers, and previous research has indicated that quality of attachment to different figures are only moderately associated with each other even when assessed with parallel methods (Furman et al., 2002). They also only examined attachment to primary attachment figures and not the entire attachment hierarchy

(Pitman & Scharfe, 2010). Finally, the version of WHO-TO utilized in their study omits the attachment function of Separation Protest which is considered important as it is uniquely displayed in relation to attachment figures (Hazan et al., 2004) and indicates that an attachment bond has been established (Hazan et al., 2006).

5.2.5 Summary of Advances in Attachment Reorganization during Adolescence

Collectively, these three studies represent major advances in the understanding of attachment in adolescence. Whereas Bowlby (1969/1982) and Ainsworth (1989) postulated that romantic partners replace parents as primary attachment figures by adulthood, Hazan and Zeifman (1994) were among the first to highlight the importance of adolescence as a critical period for the movement of attachment needs from parents to peers, and to empirically demonstrate the process of attachment reorganization (Zeifman & Hazan, 2008).

Later studies have extended this developmental model by exploring the composition of adolescent attachment hierarchies (e.g., Trinke & Bartholomew, 1997; Rowe & Carnelley, 2005), the roles of different attachment figures (e.g., Markiewicz et al., 2006), and the factors that influence attachment reorganization (e.g., Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006; Nickerson & Nagle, 2005). However, there are limitations in the existing research with studies either limited by only allowing one nomination per attachment function, or by providing purely descriptive information on the content and structure of the attachment hierarchy (Pitman & Scharfe, 2010).

Both parent and peer relationships are considered integral to psychological health and adaptive for the normative challenges of adolescence such as achieving autonomy, self-reliance, and establishing identity (Allen & Land, 1999). Improved clarification of the developmental process of attachment reorientation from parents to peers would

therefore provide further insight into how attachment is associated with adaptive adolescent adjustment (Ridenour, Greenberg, & Cook, 2006). Few studies to date have attempted to address the proposed functions of attachment networks (see Goh & Wilkinson, 2007; Mayseless, 2004, Pitman & Scharfe, 2010, and Nomaguchi, 2008 for exceptions) and only one (i.e., Rosenthal and Kobak, 2010) has directly examined attachment reorganization in relation to adaptive functioning amongst adolescents.

5.3 The Present Study

5.3.1 Overview

The overall aim of the present research is to examine the developmental process of attachment reorganization in adolescence as it occurs over twelve months, and to examine the impact of different attachment relationships on adolescent psychological health and wellbeing. Adolescence is a key period wherein individuals begin to consolidate cognitions and expectations of the world, and incorporate extrafamilial individuals into their relationship networks (Allen & Land, 1999; Kaslow et al., 2000).

There are three main objectives for the research presented here. Firstly, to replicate and validate existing research on attachment reorganization in adolescence. Secondly, to examine changes in attachment relationships through the process of attachment reorientation over a twelve month period. Thirdly, to investigate the contributions of changing attachment relationships to adolescent psychological health after accounting for individual differences in global attachment models. Age and gender differences in attachment are also investigated. The conceptual framework for this research, such as the hypothesized relationships between the two measures of adolescent attachment and each of their relationships to adolescent wellbeing, is illustrated in Figure 5.1.

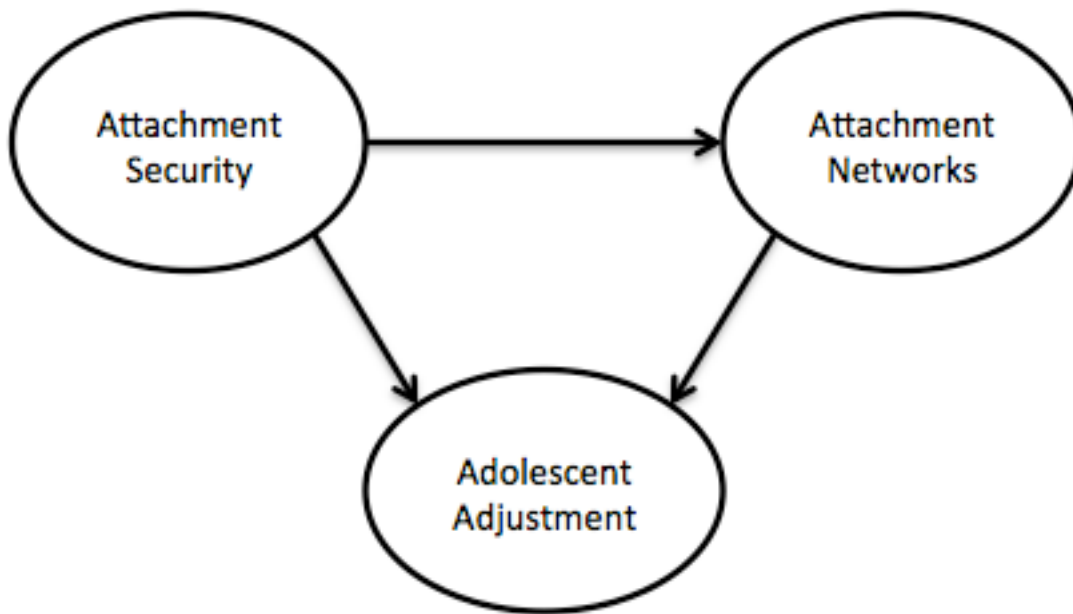


Figure 5.1. Conceptual Model Linking Attachment Constructs and Adolescent Adjustment.

5.3.2 Objective One: Attachment Reorganization in Cross-section

The first aim of the present study is to replicate previous research demonstrating the process of attachment reorganization using a sample of early and late adolescents.

According to theorists, the onset of puberty initiates the search for a partnership with similar age peers that culminate in the reorganization of the content and structure of the attachment hierarchy as extrafamilial figures are incorporated into the adolescent's attachment hierarchy (Ainsworth, 1989; Hazan & Shaver, 1994).

5.3.2.1 Attachment Reorganization

Attachment theory postulates that attachment reorganization begins with the onset of puberty and results in a close friend or romantic partner replacing parents at the top of

the attachment hierarchy by late adolescence or young adulthood (Allen & Land, 1999; Connolly & Johnson, 1996). During this period, adolescent attachment networks expand to incorporate extrafamilial members with adolescents incrementally shifting attachment functions to these peers from parents with increasing age (Fraley & Davis, 1997; Trinke & Bartholomew, 1997). Parents, however, continue to function as important attachment figures even as attachment needs are incrementally shifted from parents to peers (Nickerson & Nagle, 2005).

5.3.2.2 Attachment Functions

Attachment needs are not all shifted simultaneously to peers from parents, but rather change gradually, in a sequential order, as adolescents gain confidence in the availability and responsiveness in their peers (Nickerson & Nagle, 2005). Attachment relationships are usually developed firstly in the context of close physical proximity (i.e., Proximity-seeking) (Hazan & Shaver, 1994), and with increasing intimacy and self-disclosure in the relationship, adolescents begin to turn to close peers for emotional support and advice-seeking (i.e., Safe Haven) (Collins & Sroufe, 1999). The missing of and distress at separations from (i.e., Separation Protest) peers then follows if adolescents find that the close peers they rely on are either unavailable or unresponsive to their attachment needs. The internalization of felt security (i.e., Secure Base) is demonstrated once the peer has consistently proven to be available in times of need and responsive in times of distress (Hazan & Shaver, 1994).

Previous research has indicated that while all individuals demonstrate a preference for peers for Proximity-seeking in late childhood and early adolescence, adolescents increasingly begin to prefer peers over parents for Safe Haven between 11 and 14 years of age (Hazan & Zeifman, 1994; Nickerson & Nagle, 2005). By late adolescence or

about 17 years of age, a majority of individuals would likewise reorient towards peers from parents for Separation Protest (Hazan et al., 1991). Parents continue to serve the Secure Base function for most late adolescents, while the majority of those who choose a peer for this function elect their romantic partner (Hazan & Zeifman, 1994; Friedlmeier & Granqvist, 2006). Thus, there are clear developmental trends in the gradual shifting in the target of attachment behaviors, with some functions being reoriented earlier than others (Feeney, 2004). This sequential reorganization of attachment functions from parents to peers has also been confirmed with Guttman scale analyses (e.g., Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006).

5.3.2.3 Attachment Figures

Attachment figures are, however, not treated equivalently with adolescents turning to different individuals within the attachment hierarchy for specific attachment needs (Doherty & Feeney, 2004; Markiewicz et al., 2006). For example, mothers remain an important attachment figure and are consistently used for Secure Base even in late adolescence and regardless of current romantic involvement (Markiewicz et al., 2006; Freeman & Brown, 2001). In turn, best friends are used most for Safe Haven, particularly among early adolescents and late adolescents without romantic partners, while romantic partners are used most for Proximity-seeking, and more by older adolescents than younger adolescents (Markiewicz et al., 2006; Nickerson & Nagle, 2005). By contrast, fathers are used least for all attachment functions regardless of age, sex, or the presence of a romantic relationship, but serve the highest-priority function of Secure Base when chosen (Freeman & Brown, 2001; Markiewicz et al., 2006). Collectively, parents continue to provide a secure base from which adolescents can explore and establish strong peer relationships (Feeney, 2004; Hazan & Zeifman, 1994).

5.3.2.4 Gender Differences

Gender differences have also been demonstrated. Fathers are used more by adolescent males than adolescent females for attachment needs while the latter report higher attachment to best friends compared to the former (Freeman & Brown, 2001; Markiewicz et al., 2006; Nickerson & Nagle, 2005). These gender effects are most pronounced for the attachment function of Safe Haven (Markiewicz et al., 2006).

5.3.2.5 Romantic Status Differences

Romantic partners initially occupy a relatively low position in the adolescent's attachment hierarchy, but through time and incrementally meeting attachment needs, gradually replace parents as the primary attachment figure within the hierarchy of attachment figures (Connolly & Johnson, 1996). This process generally requires for romantic relationships to have lasted for about two years in length (Hazan & Zeifman, 1994; Fraley & Davis, 1997). For late adolescents who are not romantically-involved, mothers, or close friendships which have exceeded 5.5 years in duration, remain primary attachment figures (Doherty & Feeney, 2004; Fraley & Davis, 1997). The presence of a romantic relationship also facilitates the reorientation of attachment functions from parents to peers, with greater romantic involvement associated with lower attachment to other members in the attachment hierarchy (Feeney, 2004; Goh & Wilkinson, 2007).

5.3.2.6 Individual Differences in Attachment Models

Aside from chronological age and the presence of a romantic relationship, individual differences in attachment working models have also been found to facilitate the rate of reorientation of attachment needs from parents to peers (e.g., Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). The findings regarding the influences of attachment expectancies on attachment reorganization are however inconsistent. On the one hand, adolescents who are securely attached to parents are argued to be more motivated and able to form attachment relationships with peers (Mayseless, 2004; Rowe & Carnelley, 2005), with attachment security linked to a higher degree of attachment reorganization from parents to peers, and mutual trust and caring in the peer relationship positively correlated with using friends or romantic partners as an attachment figure (Fraley & Davis, 1997).

On the other hand, adolescents who are insecurely attached to parents are postulated to initiate the process of attachment reorganization earlier, and to seek support in their peer relationships in order to satisfy unmet attachment needs (Nickerson & Nagle, 2005; Wilkinson, 2004). Specifically, insecurely attached adolescents demonstrated a faster movement of attachment needs from parents to peers, wherein they were more likely to identify peers than parents as primary attachment figures and to turn to them as a source of security (Freeman & Brown, 2001; Schneider & Younger, 1996). Moreover, high insecurity with mothers was found to facilitate the rate of attachment reorganization amongst adolescents with high attachment anxiety whilst impeding this process among adolescents demonstrating high attachment avoidance (Friedlmeier & Granqvist, 2006).

The research examining sex and age differences in the influence of attachment working models on attachment reorganization has similarly been equivocal. Whereas some researchers have found neither age nor gender differences as a function of

attachment security (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006), Markiewicz and her colleagues (2006) demonstrated that attachment insecurity predicted the extent to which adolescents used either mothers or romantic partners for attachment functions, especially Secure Base, with the effects of attachment insecurity most pronounced for the oldest group relative to young and middle adolescents.

5.3.2.7 General Hypotheses

In line with previous research, the present dissertation proposes that the process of attachment reorganization will take place over adolescence, and this will follow a sequential movement of attachment functions beginning with Proximity-seeking and ending with Secure Base. Attachment needs are hypothesized to be gradually and incrementally shifted from parents to best friends over adolescence, and finally focusing on a romantic partner in late adolescence or young adulthood. Attachment figures are anticipated to be differentiated with each fulfilling certain functions for the adolescent while subsisting within an interpersonal context of other attachment relationships. The presence of a romantic partner is expected to facilitate attachment reorganization and gender differences in the use of fathers and best friends for attachment functions are anticipated. Attachment working models are likewise expected to influence the extent of attachment reorientation among adolescents. In sum, this research predicts that developmental differences in the use of mothers, fathers, best friends and romantic partners for attachment functions will be demonstrated cross-sectionally, and these would vary according to gender, age, current romantic status, and individual differences in attachment models.

5.3.3 Objective Two: Attachment Reorganization Over Time

As most of the research examining attachment reorganization in adolescence has been cross-sectional, the current dissertation also intends to examine changes in attachment relationships as adolescent attachment networks undergo reorganization over twelve months. There is only one extent longitudinal study (i.e., Friedlmeier & Granqvist, 2006) investigating attachment reorganization phenomenon within adolescence. This study intends to replicate and extend these findings to determine if attachment reorganization can be demonstrated longitudinally over a one year period.

5.3.3.1 Attachment Reorganization

Friedlmeier and Granqvist (2006) were able to demonstrate the sequential movement of attachment functions cross-sectionally but could not fully confirm the model of attachment reorganization proposed by Hazan and Zeifman (1994, 1999) in their prospective longitudinal analyses. Their findings indicated that only two-thirds of all adolescents surveyed reported changes in their attachment relationships. Around 38% ($n = 44$) showed the predicted movement of attachment from parents to peers, 37% ($n = 43$) exhibited a “backtransference” of attachment from peers to parents, and another 24% ($n = 28$) demonstrated a non-fitting pattern of change. Moreover, the extent of reorganization demonstrated was not found to increase significantly between the two data points 12 to 15 months apart.

5.3.3.2 Romantic Status Differences

The presence of a romantic relationship was found to facilitate the longitudinal movement of attachment functions to peers, with the extent of reorganization demonstrated greatest amongst adolescents who had formed romantic relationships between the two points of assessment (Friedlmeier & Granqvist, 2006). Specifically, attachment strength demonstrated to romantic partners was similar between adolescents with stable romantic relationships and those with more recently established relationships. Adolescents who were no longer romantically-involved at the second assessment point did not resort back to parents as primary attachment figures but rather continued to use peers as providers of attachment functions. Overall, adolescents appeared to begin re-orienting towards peers for attachment functions even in the absence of romantic relationships, with current romantic involvement facilitating attachment reorganization particularly amongst those with more recently established romantic relationships.

5.3.3.3 Individual Differences in Attachment Models

Whereas the effects of individual differences in attachment models on the movement of attachment functions were inferred mostly from cross-sectional studies (e.g., Freeman & Brown, 2001; Markiewicz et al., 2006), Friedlmeier and Granqvist (2006) found that the longitudinal effects on attachment reorganization were dependent on the characteristics of the particular type of insecure attachment. The interaction of maternal insecurity and attachment anxiety resulted in a higher degree of movement of attachment from parents to peers. Conversely, the interaction between maternal

insecurity and attachment avoidance impeded the process of attachment reorganization from parents to peers.

5.3.3.4 General Hypotheses

Aligned with the developmental model of attachment reorganization postulated by Hazan and Zeifman (1994, 1999), this research proposes that attachment reorganization will be demonstrated longitudinally over twelve months. It also proposes that attachment functions will be shifted incrementally from parents to peers in a sequential fashion, with current romantic involvement facilitating this process particularly among adolescents with newly-established romantic relationships. Furthermore, global attachment models will differentially influence the extent of attachment reorganization with attachment anxiety encouraging re-orientation of attachment needs from parents to peers and attachment avoidance inhibiting this same process.

5.3.4 Objective Three: Attachment Reorganization and Adolescent Adjustment

The third objective of the present dissertation focuses on identifying the relative importance of different attachment figures for adolescent psychological health during attachment reorganization. Research in this area is crucial as theorists have highlighted the importance of understanding adolescent attachment relationships within the context of their expanding hierarchies (Furman & Wehner, 1994, 1997; Kobak et al., 2007), with attachment relationships significant for both physical and psychological functioning throughout the lifespan (Diamond & Hicks, 2004). While there has been extensive research examining the influences of the quality of attachment relationships for adolescent adjustment, this literature has often been disjointed due to methodological shortcomings in assessment measures (Wilson & Wilkinson, 2012), the

use of different adjustment measures (Helsen et al., 2000), and the failure to account for the rapid developmental changes in adolescence (Hay & Ashman, 2003).

Furthermore, the IPPA, the major self-report measure used to assess adolescent attachment, was created prior to more recent research clarifying the major dimensions of attachment (Shaver & Mikulincer, 2002; Wilkinson, 2008), and claims have been made that it measures the general affective quality of relationships without particular reference to attachment-relevant constructs (Heiss et al., 1996; McElhaney et al., 2009). Insecure attachment models are generally viewed as a risk factor for psychopathology (Rutter, 1990), and it is well established that individual differences in attachment models are related to a variety of adolescent psychosocial outcomes (Shaver & Mikulincer, 2002; Vandell, 2000; Wilkinson, 2010a). Attachment expectancies additionally affect psychological health indirectly through the process of attachment reorganization (Pitman & Scharfe, 2010) by determining the individual's willingness and ability to derive comfort and support from attachment figures (Diamond & Hicks, 2004). Therefore, this research concurrently investigates normative attachment strength to attachment figures and individual differences in attachment working models to determine their differential effects for adolescent wellbeing.

5.3.4.1 Cross-sectional Effects of Attachment on Psychological Health

The research examining the influences of attachment figures on adolescent adjustment during attachment reorganization is relatively recent. Whilst attachment figures are deemed significant for adolescent wellbeing (Armsden & Greenberg, 1987; Rice, 1990), attachment reorganization entails changes in the meaning and functions of these attachment relationships (Bowlby, 1969/1982; Collins, 1997), with age and gender also contributing to changes in the relationships with parents and peers (Helsen et al.,

2000). Insecure attachment working models are likewise problematic for the development and maintenance of healthy interpersonal relationships, self-concept, and psychological wellbeing in adolescence (Wilkinson & Parry, 2004). Accordingly, this research firstly seeks insight on a cross-sectional level into how adolescents' reliance on particular attachment figures contribute to their psychological health separate from the effects of attachment working models.

5.3.4.1.1 Attachment Relationships

Preliminary evidence indicates that attachment figures differentially impact adolescent adjustment during attachment reorganization (e.g., Goh & Wilkinson, 2007; Mayseless, 2004; Rosenthal & Kobak, 2010; Zhang, Chan, & Teng, 2011). Cross-sectional studies examining the attachment network have indicated that placing friends higher and fathers lower or not at all, in the attachment hierarchy were associated with greater externalizing and internalizing behaviors for all adolescents (Rosenthal & Kobak, 2010). Within the networks of romantically-involved adolescents, mothers continued to predict adolescent distress and self-esteem, with friends becoming increasingly important for adolescent self-esteem as length of romantic involvement increased (Goh & Wilkinson, 2007). By contrast, romantic partners only predicted self-esteem for adolescents with short-term romantic relationships and were linked to distress among adolescents with long-term romantic involvement (Goh & Wilkinson, 2007).

In turn, studies examining the movement of attachment functions have found young adults who shifted Proximity-seeking to peers but continued to use parents for Secure Base to report more positive affect and less loneliness than those who used peers for all attachment functions (Zhang et al., 2011). In a similar vein, late adolescent Israeli males

demonstrated better coping skills and adjustment in the transition to military conscription when they had shifted Proximity-seeking from parents to peers in the same combat unit (Mayseless, 2004). Collectively, these studies reaffirm findings from the adolescent adjustment literature that parent and peer attachment relationships both predict adolescent psychological health when used by adolescents to fulfill attachment functions.

5.3.4.1.2 Age Differences

Parents (especially mothers) generally remain the primary attachment figures even in late adolescence (Trinke & Bartholomew, 1997; Rowe & Carnelly, 2005). However, the reliance on parents as exclusive attachment figures decreases throughout adolescence (Allen & Land, 1999; Lieberman et al., 1999), with peers beginning to serve many of the same attachment needs as parents by middle to late adolescence (Buhrmester, 1992). Accordingly, mother and father attachments were found more strongly related to the self-esteem of younger than older adolescent while peer attachment was more predictive of depression in older than younger adolescents (Wilkinson, 2006b). Similarly, early adolescents who chose mothers as primary attachment figures were at lower risk of externalizing behaviors than those who nominated friends or romantic partners (Nomaguchi, 2008). Parents therefore appear more important for the psychological health of early adolescents whereas peers contribute more to late adolescents' wellbeing as individuals incrementally re-orient their attachment needs from parents to friends and romantic partners (Wilkinson, 2006b).

5.3.4.1.3 Gender Differences

A sex identification or 'allegiance' effect (Rice et al., 1997) has sometimes been documented with same-sex attachments both more supportive and important for adolescent psychological health than opposite-sex attachments (e.g., Lieberman et al., 1999; Paterson et al., 1994; Wilkinson, 2006b). Older female adolescents reported less availability from and reduced dependence on fathers whilst continuing to use mothers for support (Lieberman et al., 1999; Paterson et al., 1994). In turn, older adolescent males continued to view fathers as available but decreased their reliance on mothers for support and proximity with the mother-son relationship increasingly distant (Lieberman et al., 1999; Paterson et al., 1994). Accordingly, mother attachment was found more strongly correlated with psychological adjustment for adolescent females while father attachment had a greater impact on the wellbeing of adolescent males (Rice et al., 1997; Wilkinson, 2006b).

Gender differences in peer attachment have likewise been demonstrated. Relative to adolescent males, adolescent females were found to report higher friend attachment and resultantly to be more vulnerable towards internalizing symptoms (Freeman & Brown, 2001; Markiewicz et al., 2006; Rosenthal & Kobak, 2010). Females were also more likely than males to nominate romantic partners as primary attachment figures in early and middle adolescence (Nomaguchi, 2008). Involvement in romantic relationships has been associated with poorer psychological adjustment for females than males wherein the former evinced steeper declines in functioning from early to middle adolescence (Joyner & Udry, 2002; Welsh, Grello, & Harper, 2003; Zimmer-Gembeck et al., 2001).

5.3.4.1.4 Individual Differences in Attachment Models

According to attachment theory, psychological disturbances in adolescence and adulthood often originate from disturbed relationships with attachment figures in infancy and across the lifespan (Bowlby, 1973, 1980). Feelings of security derived from attachment bonds are considered integral in regulating both positive and negative responses to internal and external stimuli (Porges, Doussard-Roosevelt, & Maiti, 1994), with insecure individuals prone to being either underregulated (Anxiety) or overregulated (Avoidance) in their emotional expression (Zimmermann, 1999). Anxiety is characterized by a fear of abandonment and rejection, negative working models of the self, and the use hyperactivation affect regulation strategies to deal with stress (Lopez & Brennan, 2000; Mikulincer, Shaver, & Pereg, 2003). Conversely, Avoidance is characterized by a fear of intimacy and dependence, negative working models of others, and the utility of deactivation affect regulation strategies to deal with stress (Lopez & Brennan, 2000; Mikulincer et al., 2003).

Adolescents who differ in their attachment models exhibit characteristic patterns of adjustment across emotional experience, self-views and risk-taking behaviors (Cooper, Shaver, & Collins, 1998; Cooper et al., 2004), and think, feel, and behave in relationships as would be predicted by attachment theory (Davila et al., 2004). The patterns of thinking exhibited in insecure working models have been linked to the patterns of expectations and cognitions seen in psychopathology such as depression and low self-esteem (Davila, Ramsay, Stroud, & Steinberg, 2005; Sroufe, Carlson, Levy, & Egeland, 1999), and coping with stress (Bottonari et al., 2007; Greenberger & McLaughlin, 1998).

Reviews have also indicated that Anxiety was more influential than Avoidance on the psychological indices aforementioned (Cozzarelli, Hoekstra, & Bylsma, 2000;

Mikulincer & Florian, 2001; Mikulincer & Shaver, 2007). Whereas anxious hyperactivation and avoidant deactivation both represent developmental deficits in internal self-regulatory capacities (Glaser, 2000), the hyperactivating strategies employed by anxious individuals impede the down-regulation of negative emotions and effective action-taking, and encourage continual and intense distress even after a threat subsides (Mikulincer & Shaver, 2007). As such, anxious individuals exhibited the worst profile of psychological adjustment and reported the poorest self-concepts and most internalizing and externalizing symptoms over time (Cooper et al., 1998; Cooper et al., 2004). By contrast, avoidant individuals employ deactivating strategies that divert attention away from distressing issues (Fraley, Garner, & Shaver, 2000) and maintain a defensive façade of security and composure, therefore reporting adequate levels of wellbeing and adaptive functioning in daily life unless faced with a severe and chronic stressor (Mikulincer & Florian, 1998).

5.3.4.1.5 General Hypotheses

Aligned with an attachment theory perspective, the effect of any attachment relationship on adolescent adjustment should be proportional to the extent to which that relationship serves attachment functions (Friedlmeier & Granqvist, 2006), wherein attachment relationships that fulfill more attachment needs are expectedly more predictive of adolescent psychological health. However, the amount of association demonstrated is anticipated to vary depending on the developmental stage of adolescence, the gender of the adolescent and parent, and the adjustment indices being measured.

Other studies also suggest that attachment working models predict psychological health beyond the contributions of attachment relationships, with Anxiety a better

predictor of adjustment than Avoidance (Klohnen et al., 2005; Zhang et al., 2011).

Therefore, it is proposed that individual differences in attachment expectancies will predict adolescent adjustment independently of the links demonstrated with attachment figures, with attachment anxiety the stronger predictor of adolescent wellbeing.

5.3.4.2 Longitudinal Effects of Attachment for Adolescent Adjustment

Studies that examined adolescent adjustment relative to different attachment figures have, however, comprised cross-sectional samples which preclude the ability to determine if associations demonstrated were the consequence of attachment reorganization or cohort effects. Individuals have also been found to display attachment behaviors and distress consistent with their predominant attachment prototype across life transitions (Scharfe, 2007; Scharfe & Cole, 2006), which can leave adolescents vulnerable to psychological maladjustment during attachment reorganization especially if they report insecure attachment models (Fraleley & Davis, 1997; Freeman & Brown, 2001; Rosenthal & Kobak, 2010). Given that the relative influences of specific attachment figures on adolescent wellbeing differ across the transitional period of adolescence (Allen & Land, 1999; Margolese et al., 2005), this study investigates the contribution of attachment relationships towards adolescent psychological health as they undergo attachment reorganization over twelve months while additionally accounting for the influences of attachment working models.

5.3.4.2.1 Changes in Attachment Relationships and Adolescent Adjustment

The movement of attachment needs from parents to peers across adolescence is considered normative, but deviations from attachment reorganization in the timing and

choice of attachment figures are suggested to put adolescents at risk of psychological maladjustment (Bowlby, 1969/1982). Premature reorganization involves peers, such as friends, romantic partners or siblings, occupying primary or secondary positions in the adolescent attachment hierarchy rather than parents or other adult caregivers in early and middle adolescence (Dishion, Nelson, & Bullock, 2004; Kobak et al., 2007).

Delayed reorganization purportedly occur when adolescents continue to rely on parents rather than peers for affiliative functions, such as companionship and activities, and do not demonstrate a preference for peers for attachment needs in middle and late adolescence (Berman & Sperling, 1991; Kobak et al., 2007).

Both forms of individual differences in attachment hierarchies have been linked to a variety of internalizing and externalizing problem behaviors (Berman & Sperling, 1991; Goldstein et al., 2005; Perosa, Perosa, & Tam, 1996; Vitaro et al., 2000). In his longitudinal examination of attachment reorganization and adolescent adjustment, Nomaguchi (2008) demonstrated that whilst nominating romantic partners or friend as primary attachment figures was related to delinquency and substance use in early and middle adolescence, preferring romantic partners over mothers as primary attachment figures ceased to be a risk factor for delinquency by late adolescence.

5.3.4.2.2 Attachment Models and Adolescent Adjustment

Attachment working models are postulated to underlie the continuity of attachment from infancy to adulthood (Bowlby, 1969/1982), and to remain relatively stable throughout adolescence even as adolescents embark on the process of attachment reorganization (Buist, Dekovic, Meeus, & Van Aken, 2004b). Longitudinal studies investigating attachment styles have found that the profiles of adolescent adjustment evinced are maintained over time, such that adolescents with more secure attachment consistently report better wellbeing than adolescents who are insecurely attached

(Cooper et al., 2004; Kenny, Lomax, Brabeck, & Fife, 1998; Papini & Roggman, 1992). Attachment expectancies also affect the quality of attachment relationships (Collins & Read, 1994; Mikulincer & Shaver, 2005; 2007) and can predispose adolescents to psychological maladjustment by encouraging premature or delayed reorganization of attachment needs (Freeman & Brown, 2001; Rosenthal & Kobak, 2010). In fact, attachment expectancies demonstrated different relationships to psychological health depending on network composition, with distress positively linked to both attachment anxiety and avoidance among undergraduates with a predominantly family network but associated with only attachment anxiety for those with a predominantly peer network (Pitman & Scharfe, 2010).

5.3.4.2.3 General Hypotheses

Attachment reorientation is considered normative and part of healthy adult development (Bowlby, 1969/1982; Hazan & Zeifman, 1994), with the developmental process of shifting attachment needs not associated with any indices of problems with parents or behavioral difficulties (Rosenthal & Kobak, 2010). Therefore, it is hypothesized that adolescents who fail to show a normative incremental shift of attachment needs to peers will exhibit lower psychosocial wellbeing compared to their age-peers. Attachment working models generally demonstrate stability and continuity over time (McCormick & Kennedy, 1994; Fraley, 2002b), and thus attachment anxiety and attachment avoidances are expected to demonstrate continual influences for adolescent health over one year.

5.4 Conclusion

There is now a third wave of measurement of adolescent attachment which focuses on understanding the normative developmental process of attachment in adolescence as adolescents evolve from being a receiver of care to becoming a potential caregiver to peers, romantic partners and own offspring (Allen, 2008). Whereas researchers have identified the model of attachment reorientation and the factors which facilitate or impede this process (Hazan & Zeifman, 1994; Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006), less investigated are the implications of different attachment relationships for adolescent adjustment during this transitional period.

Attachment relationships are especially salient for important developmental tasks during adolescence (Buist et al., 2004b) with adolescence a period of heightened risk for psychopathology (Brooks-Gunn & Petersen, 1991; Weller & Weller, 2000). Therefore, investigation of attachment relationships as adolescents reorient attachment needs from parents to peers and of their relative importance for adolescents adjustment is paramount. Specifically, this study distinguishes itself from previous adolescent attachment research by purposefully not using the IPPA but rather focusing on both normative attachment strength and individual differences in attachment expectancies in its investigation of adolescent wellbeing.

There are three main objectives with this dissertation firstly intending to contribute to the empirical literature by replicating the model of attachment reorganization among Australian adolescents. Secondly, this research furthers present knowledge by investigating longitudinal changes in attachment relationships as attachment reorganization occurs over a year. Finally, both normative attachment and attachment expectancies are investigated to elucidate the relative contributions of different attachment figures for adolescent adjustment, while also accounting for established age

and gender differences in the adolescent wellbeing literature. Examining adolescent adjustment in the context of known demographic differences will enhance the external validity of this research by specifying limits on the generalizability of its findings (Shadish, Cook, & Campbell, 2002), thereby bypassing some of the inconsistencies reported in the IPPA literature. In sum, this dissertation attempts to provide a more comprehensive understanding of the importance of attachment figures for adolescent adjustment by integrating both normative and individual-differences attachment phenomena.

CHAPTER 6

Cross-sectional Study: Attachment Reorganization

6.1 The Present Study

Adolescence is an important life transition involving significant cognitive, biological, psychological, and social transformations as individuals move beyond childhood into adulthood (Wilson & Wilkinson, 2012). These changes can be stressful for many individuals, with adolescents generally at greater risk of maladjustment and psychopathology (Meadows, Brown, & Elder Jr., 2006). Attachment relationships with parents and peers are argued to play a pivotal role in helping adolescents successfully navigate this developmental transition (Laible et al., 2000), and themselves undergo important transformations during this period (Connolly, Paikoff, & Buchanan, 1996). Profound changes occur in the attachment system (Allen, 2008) such that attachment relationships in adolescence are in a state of flux (Friedlmeier & Granqvist, 2006), with likely repercussions for adolescent psychological wellbeing.

Few studies have evaluated adolescent wellbeing in the context of the evolving and broadening attachment networks of adolescents (Furman & Wehner, 1994, 1997; Wilkinson, 2006b). It was only recently that researchers have begun to address the normative aspects of attachment, and there is scant literature on how adolescent psychological health relates to the longitudinal process of developmental changes considered normative in adolescence (Scharf & Mayseless, 2007). In other words, there is a need for research that examines how the normative changes in function and meaning of attachment relationships that occur over adolescence (Macek & Jezek, 2007) relate to adolescent psychological health.

6.1.1 Objective One: Attachment Reorganization in Adolescence

Before a comprehensive understanding of the influences of attachment figures on adolescent psychological health can be achieved, it is important to firstly identify the different functions that attachment figures serve for the maturing adolescent. As the developmental model of attachment reorganization has received comparatively little attention, and only one study (i.e., Markiewicz et al., 2006) has addressed the use of different attachment figures across the broad age range of adolescence, the first objective of this dissertation was to determine if this model of attachment reorganization can be successfully applied to Australian adolescents. Specifically, it is necessary to clarify whether the findings from previous research, which focused on identifying the functions served by different attachment figures in the adolescent attachment hierarchy, can be replicated in the present study. Doing so would also help determine if the findings of developmental differences in the use of mothers, fathers, best friends, and romantic partners demonstrated by Markiewicz and her colleagues (2006) are reliable.

The first aim of this study was thus to replicate the developmental model of normative attachment reorganization using cohorts of early and late adolescents from Australia. Previous research (e.g., Hazan & Zeifman, 1994; Fraley & Davis, 1997; Freeman & Brown, 2001) has established that adolescents turn to parents and peers for different attachment functions depending on their age, gender, and the presence (or absence) of a romantic relationship. Markiewicz and her colleagues (2006) further differentiated between attachment figures, and showed similar results with young adolescents, middle adolescents, and young adults relying on different attachment figures for attachment needs. They additionally demonstrated that some attachment figures were most preferred for specific attachment functions (Markiewicz et al., 2006).

Another aim of the current study was to determine the influences of global attachment models on the process of attachment reorganization. Individual differences in existing models are postulated to be relatively stable characteristics of the individual (Ainsworth et al., 1978; Main & Cassidy, 1988; Scharfe & Bartholomew, 1994), and may play an important role in regulating attachment reorientation from parents to peers (Ainsworth & Bowlby, 1991; Fraley & Davis, 1997). Attachment anxiety and avoidance were demonstrated to differentially affect attachment reorganization (Freeman & Brown, 2001; Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006). Age differences in utility of mothers and romantic partners as attachment targets as a function of attachment security were also reported (Markiewicz et al., 2006). Determining if the model of attachment reorganization remains the same after accounting for attachment anxiety and avoidance would provide important information regarding the influences of attachment expectancies on network organization, and network development, stability, and change over time (Rowe & Carnelley, 2005).

In addressing the first objective, attachment reorganization will be examined in view of age, gender, romantic status, and attachment model differences. Different attachment figures supposedly serve specific functions according to the various developmental stages of adolescence (Furman & Buhrmester, 1992; Sullivan, 1953), and thus attachment reorganization will also be examined using the four attachment functions of Proximity-seeking, Safe Haven, Separation Protest, and Secure Base.

6.1.1.1 Attachment Reorganization

Based on attachment theory and empirical research (Ainsworth, 1989; Hazan & Zeifman, 1999; Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006), it is hypothesized that attachment reorganization will be demonstrated over adolescence.

Specifically, early adolescents are anticipated to turn most to parents (i.e., mothers and fathers) for fulfillment of attachment needs, while late adolescents report an increased use of peers (i.e., best friends and romantic partners) to satisfy attachment functions.

6.1.1.2 Attachment Functions

Attachment functions are gradually shifted over adolescence from parents to peers in steps analogous to the formation of attachment with caregivers in infancy (Hazan & Zeifman, 1994). Most individuals demonstrated a preference towards peers for Proximity-seeking and Safe Haven by early and middle adolescence respectively, while continuing to use parents for Separation Protest and Secure Base in late adolescence (Hazan & Zeifman, 1994; Friedlmeier & Granqvist, 2006; Nickerson & Nagle, 2005). Therefore, it is predicted that attachment functions will be shifted incrementally from parents to peers across adolescence in the order of Proximity-seeking, Safe Haven, Separation Protest, and Secure Base.

6.1.1.3 Attachment Figures

Adolescents also demonstrate preferences for different attachment figures for specific attachment needs (Furman & Buhrmester, 1992; Hazan & Zeifman, 1994; Markiewicz et al., 2006). Mothers were found to occupy a unique role in the adolescents' attachment hierarchies (Margolese et al., 2005) and to be an important source of security for all adolescents regardless of age, gender, or the presence of a romantic relationship (Freeman & Brown, 2001; Markiewicz et al., 2006). By contrast, fathers were consistently the least used attachment figure for all attachment functions irrespective of age, gender, or current romantic involvement (Freeman & Brown, 2001;

Markiewicz et al., 2006). Best friends were chosen most for Safe Haven, especially by early adolescents and late adolescents without romantic relationships, while romantically-involved adolescents turned to romantic partners most for Proximity-seeking (Markiewicz et al., 2006; Nickerson & Nagle, 2005).

It is hypothesized that both early and late adolescents will report turning to best friends and romantic partners (if present) most for Proximity-seeking and Safe Haven. Specifically, best friends are expected to be used most by all adolescents for Safe Haven with romantically-involved adolescents turning to their romantic partners most for Proximity-seeking. Mothers will continue to serve as the main target of Separation Distress and Secure Base for both early and late adolescents, while fathers will be least used by all adolescents as an attachment figure for the four attachment functions.

6.1.1.4 Gender Differences

A consistent finding in the attachment reorganization literature is that adolescent males report higher attachment strength to fathers, and female adolescents, to best friends (Freeman & Brown, 2001; Markiewicz et al., 2006). This gender difference was also most pronounced for Safe Haven (Markiewicz et al., 2006). Accordingly, gender differences are expected with adolescent males turning more to fathers for attachment needs, and female adolescents to best friends, particularly for Safe Haven.

6.1.1.5 Romantic Status Differences

The presence of a romantic relationship has been found to facilitate attachment reorganization (Friedlmeier & Granqvist, 2006), with romantic partners increasing in importance as attachment figures with time and experience (Connolly & Johnson,

1996). Adolescents with romantic partners reported less attachment strength to parents and best friends as compared to adolescents who were not romantically-involved (Feeney, 2004; Goh & Wilkinson, 2007). Romantically-involved adolescents also used romantic partners more, and mothers, fathers, and best friends less for all attachment functions (Markiewicz et al., 2006). Consequently, it is anticipated that adolescents with romantic partners will report greater attachment strength to romantic partners and lower attachment strength to mothers, fathers, and best friends for all attachment needs, compared with adolescents not in a romantic relationship.

6.1.1.6 Individual Differences in Attachment Models

Although attachment expectancies have been shown to influence the rate of attachment reorientation from parents to peers, there are currently some inconsistencies in the attachment reorganization literature which require further clarification. Secure attachment to parents has been linked to a higher degree of attachment reorientation, with attachment insecurity similarly demonstrated to facilitate the shifting of attachment functions from parents to peers (Hazan & Zeifman, 1994; Fraley & Davis, 1997; Nickerson & Nagle, 2005). The two dimensions of attachment insecurity also differentially affected attachment reorganization whereby attachment anxiety promoted an earlier initiation of attachment reorganization and attachment avoidance inhibited this same process (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). Age, but not gender, differences have sometimes been found wherein attachment insecurity predicted the utility of mothers and romantic partners for attachment functions, especially Secure Base, and were most pronounced among late adolescents compared with young and middle adolescents (Markiewicz et al., 2006).

Given these contradictions, the current study furthers previous work by examining the model of attachment reorganization after accounting for the influences of existing attachment models. Aligned with the view of normative attachment formation (Bowlby, 1969/1982; Hazan & Shaver, 1994), it is hypothesized that attachment reorganization demonstrated will be similar regardless of individual differences in attachment models. However, attachment anxiety is anticipated to facilitate a greater reliance on peers (i.e., best friends and romantic partners) for attachment functions whereas attachment avoidance will be associated with delayed reorientation of attachment needs from parents (i.e., mothers and fathers). The effects of attachment insecurity on who adolescents turn to for attachment functions, especially Secure Base, are expected to be more pronounced for late adolescents than early adolescents.

6.2 Method

6.2.1 Participants

Five hundred and sixty-five volunteers were initially recruited from nine private and government high schools in the Australian Capital Territory (ACT), Australia. Forty-three participants were excluded because they failed to complete the modified Attachment Network Questionnaire (modified ANQ; Doherty & Feeney, 2004), resulting in the final sample of 170 male and 352 female participants ($N = 522$). The mean age was 15.56 years ($SD = 2.16$) and ranged from 11.83 years to 19.17 years. Participants were categorized by their years of schooling into ‘Early Adolescents’ (Years 7 and 8) or ‘Late Adolescents’ (Years 11 and 12). The ‘Early Adolescents’ cohort consisted of 192 volunteers (78 males and 114 females) aged between 11.83 years and 14.50 years ($M = 12.84$ years, $SD = .56$) while the ‘Late Adolescents’ cohort

comprised 330 volunteers (92 males and 238 females) with ages ranging from 15.42 years to 19.17 years ($M = 17.14$, $SD = .63$). In total, 172 participants (33.0%) reported current involvement in a romantic relationship of whom 37 (19.27%) were early adolescents and 135 (40.91%) were late adolescents. Eight early adolescents (4 males and 4 females) did not indicate their current romantic status. Participants (74.2%, $n = 379$) predominantly lived with both biological parents as reported by 79.8% of early adolescents ($n = 146$) and 71.0% of late adolescents ($n = 233$), and based on joint parental occupational status were of middle to upper socio-economic status. Majority of the participants (84.1%, $n = 439$) identified themselves as Caucasian Australians.

6.2.2 Procedure

Schools were contacted upon approval granted by the ANU Human Ethics Committee and the relevant ACT Education Boards for the research study to proceed. Upon obtaining permission from the school principals, contact was made with the relevant Psychology and Pastoral Care coordinators of each school. Parental information sheets providing an overview of the research and permission slips were distributed to potential participants several weeks before the arranged questionnaire administration. Participants completed the questionnaire in their classrooms using one class period during normal school hours. Confidentiality of their responses was assured, and participants were either debriefed by the researcher, or given debrief summary sheets following questionnaire administration. Measures were counterbalanced using four versions of the same questionnaire package. The data collection process commenced August 2008 and finished in June 2009.

6.2.3 Measures

The questionnaire package ‘Youth and Relationships 2008’ included several measures as shown in Table 6.1.

Table 6.1

Measures of ‘Youth and Relationships 2008’ Questionnaire Package

Measures
Attachment
The Modified Attachment Network Questionnaire (Doherty & Feeney, 2004; Appendix A)
Experiences in Close Relationships- Revised- General Short Form (Wilkinson, 2010b; Appendix B)
Psychological Health
Center for Epidemiological Studies Depression Scale (Radloff, 1977; Appendix C)
Self-Liking/Self-Competence Scale- Revised Version (Tafarodi & Swann, 2001; Appendix D)
Adolescent Stress Questionnaire (Byrne, Davenport, & Mazanov, 2007 ; Appendix E)
Current Lifestyle
School Attitude Scale (Wilkinson & Kraljevic, 2004; Appendix F)
Romantic Status Question (Appendix G)

6.2.3.1 Attachment Measures

Modified Attachment Network Questionnaire

The modified Attachment Network Questionnaire (modified ANQ; Doherty & Feeney, 2004) is a two-part measure combining features of the Attachment Network Questionnaire (ANQ; Trinke and Bartholomew, 1997) and WHO-TO (WHO-TO; Hazan & Zeifman, 1994) to allow the identification of multiple attachment figures across attachment functions. For the first section, participants list a maximum of ten people to whom they “currently feel a strong emotional tie to, regardless of whether that tie is positive, negative or mixed” (Trinke & Bartholomew, 1997, p. 609) as a measure of the individual’s attachment network. In the second section, two items are assessed for each of the four attachment functions (Proximity-seeking, Safe Haven, Separation Protest and Secure Base) with questions such as “Who do you most like to spend time with?” and “Who do you feel you can always count on no matter what?” measuring the functions Proximity-seeking and Secure Base respectively. A total of eight questions measure the four attachment functions. Participants nominate up to three individuals in order of importance for each item, from the list of individuals named in the first section.

The scoring system utilized is likewise adopted from Doherty and Feeney (2004). Individuals ranked first and second in importance are given scores of three and two respectively, and the third nominated individual, a score of one. Scores for the nominated individual are achieved in two ways— at the individual attachment function level, wherein the average of the two scores measuring each attachment function is obtained, resulting in a possible score of zero to three (e.g., Secure Base = $(3+3)/2$); and at the combined attachment functions level, wherein a strength of attachment score for the individual is calculated by averaging the mean scores of the four attachment functions (e.g., $(\text{Safe Haven} + \text{Secure Base} + \text{Proximity-seeking} + \text{Separation}$

Protest)/4), with higher scores reflecting greater attachment strength to the individual (Minimum score = 0, Maximum score = 3). An example of the scoring template is illustrated in Figure 6.1.

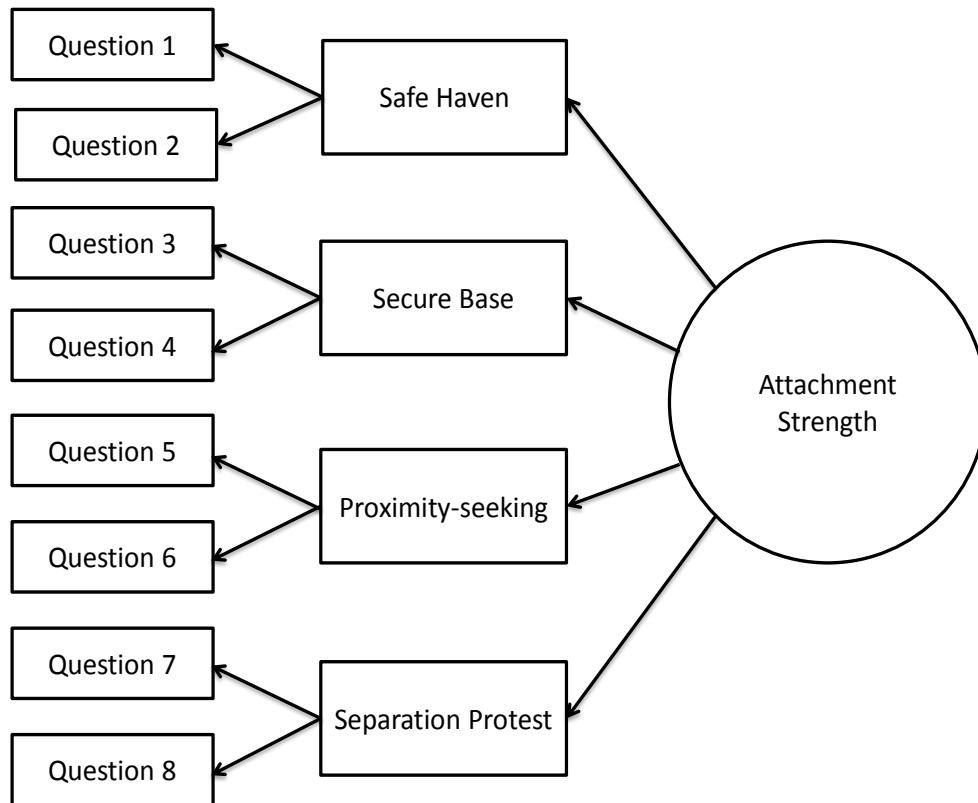


Figure 6.1. Scoring Template for Individual Attachment Functions and Combined Attachment Strength for each Nominated Individual.

For both sections of the modified ANQ, individuals nominated by participants were categorized into one of 13 relationship figures of Mother, Father, Step-Father, Step-Mother, Boy/Girlfriend, Ex-Boy/Girlfriend, Best Friend, Friend, Brother, Sister Other relations, Other Non-Relations, and Non-Person. Like Doherty and Feeney (2004), correlations among the four functions for each relationship figure were significant at $p <$

.01 (r s ranged from .18 to .93). Internal consistency was demonstrated for each relationship figure with coefficient alphas between .62 and .96.

Experiences in Close Relationships Questionnaire- Revised- General Short Form

The Experiences in Close Relationships- Revised- General Short Form (ECR-R-GSF; Wilkinson, 2010b) is a 20-item self-report questionnaire assessing attachment Anxiety (model of Self) and Avoidance (model of Other) in relationships in general. This questionnaire is based on the Experiences in Close Relationships-Revised (ECR-R; Fraley, Waller et al., 2000) and modified for use with an adolescent population. Ten items measure each of the two dimensions with all the Anxiety items positively-phrased, such as “I worry a lot about relationships”, and all but three of the Avoidance items negatively-phrased, such as “I feel comfortable depending on other people”. Participants rate how strongly they agree with each item on a 5-point Likert scale from 1 (Disagree strongly) to 5 (Agree strongly). Negatively-phrased items are reverse-scored before raw scores are totaled. Higher scores reflect greater anxiety and avoidance in attachment relationships on the subscales of Anxiety and Avoidance respectively (Minimum score = 10, Maximum score = 50). The ECR-R-GSF evinces a two-factor model congruent with the original ECR-R and relates appropriately to the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) dimensions and categories (Wilkinson, 2010b). Internal consistency was high for the subscales of Anxiety (Cronbach’s $\alpha = .87$) and Avoidance (Cronbach’s $\alpha = .86$) for this sample.

6.2.3.2 Psychological Health Measures

Center for Epidemiological Studies Depression Scale (CES-D)

The short version of the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) is a 10-item self-report questionnaire assessing the amount of depressive symptomatology experienced in the recent four weeks. The wording of the scale has been modified for an adolescent population. An example item from this measure is “I felt sad”. Participants rate how often they have experienced each item in the recent four weeks on a 4-point Likert scale from 1 (Rarely or not at all) to 4 (Most or all of the time). Raw scores are summed with higher scores reflecting increasing amounts of symptomatology (Minimum score = 10, Maximum score = 40). The CES-D demonstrates good internal consistency and test-retest reliability for an adolescent population (Roberts, Andrews, Lewinsohn, & Hops, 1990). Internal consistency was high (Cronbach’s $\alpha = .90$) for the current sample.

Self-Liking/Self-Competence Scale- Revised Version (SLCS-R)

The Self-Liking/Self-Competence Scale- Revised Version (SLCS-R; Tafarodi & Swann, 2001) is a 16-item self-report questionnaire measuring global self-esteem across two dimensions of self-liking and self-competence. Self-liking refers to an overall sense of self-worth and is assessed through items such as “I am very comfortable with myself”. Self-competence refers to a sense of personal efficacy and is assessed by items such as “I perform very well at many things”. Eight items measure each of the two dimensions, with four positively-phrased and four negatively-phrased items for each subscale. The wording of the scales has been modified for an adolescent population. Participants rate how strongly they agree with each item on a 5 point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). Negatively-phrased items are reverse-scored

before raw scores are totaled, with higher scores reflecting greater self-worth and a greater sense of personal efficacy for the subscales of Self-liking and Self-competence respectively (Minimum score = 8, Maximum score = 40). A total global self-esteem score derives from the addition of these two sets of scores (Minimum score = 16, Maximum score = 80). The SLCS-R demonstrates good convergent and discriminant validity with other-reports, and high test-retest reliability (Tafarodi & Swann, 2001). For the current sample, internal consistency was high for the subscales of Self-liking (Cronbach's $\alpha = .90$) and Self-competence (Cronbach's $\alpha = .82$), and for the total SLCS scale (Cronbach's $\alpha = .91$).

Adolescent Stress Questionnaire (ASQ)

The Adolescent Stress Questionnaire (ASQ; Byrne, Davenport, & Mazanov, 2007) is a 58-item self-report questionnaire assessing the amount of distress experienced from the occurrence of individual stressors. For this research, a reduced 20-item scale was derived from the original questionnaire on the basis of relevance and internal consistency of its items. The resultant five dimensions of adolescent stress measured are Home Life, School-Related, Peer Pressure, Romantic Relationship, and Future-Oriented, with each dimension comprising four items. Example items from each dimension include "Disagreements between my parents" (Home Life), "Lack of respect from my teacher(s)" (School-Related), "Being judged by my friends" (Peer Pressure), "Breaking up with my boyfriend/ girlfriend" (Romantic Relationship), and "Concerns about my future" (Future-Oriented). Participants rate how stressful they experience each item on a 5-point Likert scale from 1 (Not at all stressful) to 5 (Very stressful). Raw scores are summed for each subscale, with higher scores reflecting increasing amount of stress experienced for each stressor dimension (Minimum score = 4, Maximum score = 20). An overall stress score is derived from summing the raw scores across all five

dimensions (Minimum score = 20, Maximum score = 100). The ASQ demonstrates high criterion validity with measures of state anxiety, depression, and self-esteem, and high test-retest reliability correlations of .68 to .88 over one week amongst adolescents (Byrne et al., 2007). For this sample, internal consistency ranged from adequate to good for each of the subscales of Home Life (Cronbach's $\alpha = .75$), School-Related (Cronbach's $\alpha = .52$), Peer Pressure (Cronbach's $\alpha = .86$), Romantic Relationship (Cronbach's $\alpha = .76$), and Future-Oriented (Cronbach's $\alpha = .74$), and for the total modified ASQ scale (Cronbach's $\alpha = .89$).

6.2.3.3 Current Lifestyle Measures

School Attitude Scale

The School Attitude Scale (Wilkinson & Kraljevic, 2004) is a 10-item self-report questionnaire measuring general attitudes to teachers, schoolwork, and attending school/college. The items are compiled from previously published scales and comprise five positively-phrased and five negatively-phrased items. Example items include "I find schoolwork easy" and "Sometimes I feel left out of things at school" respectively. Participants rate how strongly they agree with each item on a 4-point Likert scale from 1 (Strongly agree) to 4 (Strongly disagree). Negatively-phrased items are reverse-scored prior to summation, with higher scores reflecting a more positive school attitude (Minimum score = 10, Maximum score = 40). The questionnaire demonstrates high internal consistency of .85 for an adolescent population (Wilkinson & Kraljevic, 2004). Internal consistency was only adequate (Cronbach's $\alpha = .70$) for the current sample.

Romantic Status

Adolescent romantic relationships are assessed with a single item, “Do you currently have a boyfriend or girlfriend?”, and responses coded for status and corresponding length of this romantic relationship on a 4-point scale from 0 (No, I am not currently involved with anyone) to 3 (Yes, we’ve been together more than one year).

6.3 Results

6.3.1 Overview

The results of the statistical analyses are organized in the following sections. Firstly, demographic information is shown depicting the general characteristics of the two cohorts of adolescents. Secondly, preliminary univariate and multivariate checks of the measures utilized in this dissertation are presented. Thirdly, the results pertaining to the composition of the attachment network are described. Fourthly, the results of the attachment functions are reported.

6.3.2 Demographic Information

The mean age of the sample was 15.56 years ($SD = 2.16$) and ranged from 11.83 years to 19.17 years. There were 170 male and 352 female adolescents. Table 6.2 presents the mean age, standard deviations and age range for male and female adolescents.

Table 6.2

Means, Standard Deviations and Range for Age According to Cohort and Sex

	Early Adolescents (<i>n</i> = 192)				Late Adolescents (<i>n</i> = 330)			
	<i>N</i>	<i>M</i>	<i>SD</i>	Range	<i>N</i>	<i>M</i>	<i>SD</i>	Range
				11.92 -				16.08 -
Male	78	12.96	.42	14.08	92	17.24	.69	19.17
				11.83 -				15.42 -
Female	114	12.75	.56	14.50	238	17.10	.60	18.75

As the number of adolescents reporting romantic relationships of more than three months' duration was fairly low (*n* = 109) (see Appendix H), the different categories of romantic relationships were instead recoded into either condition of "No Romantic Relationship" and "In a Romantic Relationship". Upon recoding, 172 adolescents (33.0%) surveyed reported current involvement in a romantic relationship, of whom 57 were male (33.5%) and 115 were female (32.7%). Eight early adolescents (Male = 4, Female = 4) did not identify their romantic status and were omitted from subsequent analyses.

A chi-square analysis revealed that approximately 10 times more late adolescent females than early adolescent females reported romantic relationships, $\chi^2(1) = 39.64, p < .001$. Conversely, a similar number of early adolescent males and late adolescent males reported romantic involvement. Chi-square analyses revealed no statistical differences between the two groups of romantically-involved males, $\chi^2(1) = .31, ns$. Figure 6.2 depicts the distribution of romantic status for early and late adolescents categorized by sex.

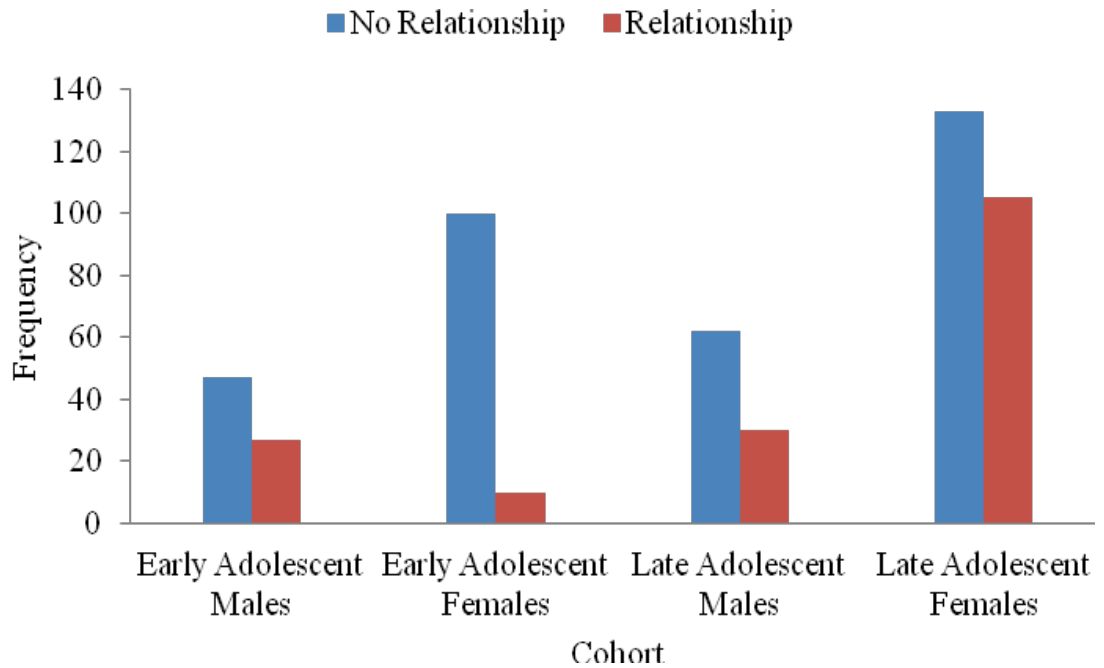


Figure 6.2. Distribution of Romantic Status according to Cohort and Sex.

6.3.3 Preliminary Checks

Preliminary checks were conducted to ensure that variables met the assumptions for univariate and multivariate analyses (Tabachnick & Fidell, 2001). All statistical analyses are performed using the Statistical Package for the Social Sciences Version 19.0, and data analyzed using inferential statistics with an alpha level of 0.05 unless otherwise reported.

Missing data in the range of 0.60% (i.e., SLCS-R) to 8.43% (i.e., ASQ) was reported on all continuous variables of interest. Missing values analyses (MVA) conducted revealed systematic patterns in missing data owing to incompleteness of the measures due to time constraints. Missing data was treated in one of two following ways: (1) random missing values and scales which demonstrated less than 10 cases of completely missing values on it were substituted with the group mode of all the other scores on the corresponding items; and (2) for scales which demonstrated 10 cases and more of

completely missing values, regression was used to estimate and substitute missing values through MVA (Tabachnick & Fidell, 2001). Between 10% and 20% of participants who had never been in a romantic relationship did not answer at least one of the four questions comprising the subscale Romantic Relationship of the ASQ. The subscale Romantic Relationships was thus removed from the ASQ, and is excluded from further analyses.

Several univariate outliers identified within each cohort through screening of boxplots were deemed reflective of the target population. Outliers were retained and assigned values one score above (or below) the next non-outlying score in the corresponding distribution (Tabachnick & Fidell, 2001). Three multivariate outliers were identified with the use of a $p < .001$ criterion for Mahalanobis distance ($\chi^2(11) = 31.26$) and excluded from further analyses.

Transformations were not performed on variables demonstrating deviations of skewness or kurtosis as these analyses reported involve relatively large sample sizes and were considered robust against distribution assumption violations (Pallant, 2005). Five hundred and eleven cases were retained for further analyses.

6.3.4 Attachment Network Composition

Some participants exceeded the maximum number of nominations required, and only the first ten nominations were included in subsequent analyses. Overall, adolescents reported an average of 8.27 ($SD = 1.99$) nominations and between 2 to 10 individuals in their networks. Early adolescents nominated an average of 8.47 individuals ($SD = 1.98$) with networks ranging from 3 to 10 individuals. Late adolescents reported an average of 8.15 nominations ($SD = 2.00$) and network sizes of between 2 to 10 individuals. An independent samples t-test revealed no significant difference in network size between

early and late adolescents, $t(509) = 1.73, p = .084$. Figure 6.3 depicts the frequency of network sizes reported by both early adolescents and late adolescents. Details relating to types of relationships and the number of nominations reported are referenced in Appendix I.

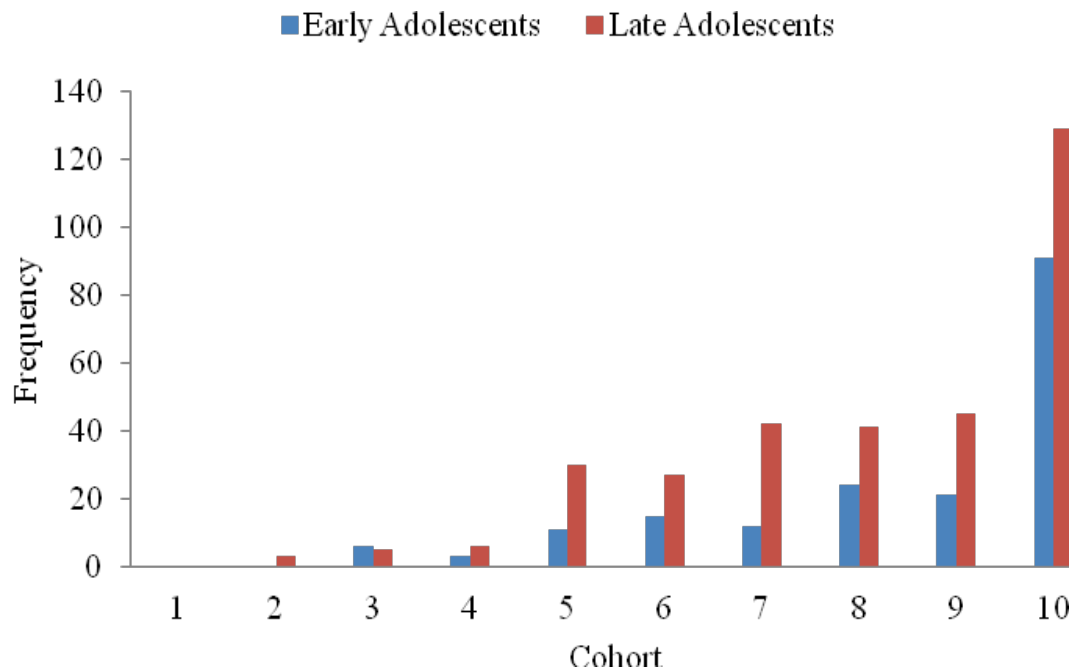


Figure 6.3. Attachment Network Distribution According to Cohort.

6.3.5 Attachment Functions: Overview

The following section will examine the attachment functions. Fulfillment of attachment functions, or attachment strength, was assessed in the second part of the modified ANQ with participants nominating up to three individuals for each question measuring one of the four attachment functions. Nominations were categorized into 1 of the 13 attachment figures as in the attachment network, and attachment strength scores tabulated for each figure across all four functions. Table 6.3 presents the mean

attachment strength scores, standard deviations, and distribution of nominations for each attachment figure for all adolescents ($N = 511$).

Based on the mean attachment strength scores reported by all adolescents, mothers, best friends, friends, fathers, and romantic partners were selected as attachment targets to explore as they were the most likely candidates adolescents used for attachment needs. These same five figures were also chosen on basis of the distribution of nominations reported, whereby the other attachment figures lacked frequencies which would allow valid comparisons to be made (see Appendix I). Specifically, most romantically-involved adolescents (84.7%) also nominated their romantic partner for at least one attachment function, with romantic partners considered integral to the process of attachment reorientation (Ainsworth, 1989; Bowlby, 1969/1982; Hazan & Zeifman, 1999). Although methodological differences preclude direct comparisons with Markeiwicz et al.'s (2006) study, presently specifying up to three nominations enabled more attachment figures to be identified compared with the latter where the majority (75.0%) chose only one attachment figure. Correspondingly, the percentages of adolescents who chose mothers, fathers, and romantic partners for at least one attachment function were higher than those reported by Markiewicz and her colleagues (2006) (i.e., mothers = 73.5%, fathers = 32.1%, and romantic partners = 40.0%).

Table 6.3

Distribution of Attachment Figure Nominations and Attachment Strength

Attachment Figure	Frequency (<i>N</i> = 511)		
	Attachment Strength <i>M</i> (<i>SD</i>)	Reported <i>f</i> (%)	Not reported <i>f</i> (%)
Mother	1.23 (.98)	399 (78.1)	112 (21.9)
Best Friend	1.07 (1.08)	307 (60.1)	204 (39.9)
Friend	.77 (.85)	345 (67.5)	166 (32.5)
Father	.59 (.69)	304 (59.5)	207 (40.5)
Boy/Girlfriend	.55 (1.00)	144 (28.2)	367 (71.8)
Sister	.33 (.66)	169 (33.1)	342 (66.9)
Brother	.17 (.41)	134 (26.2)	377 (73.8)
Other Relatives	.14 (.39)	94 (18.4)	417 (81.6)
Ex-Boy/Girlfriend	.05 (.30)	21 (4.1)	490 (95.9)
Other Non- Relatives	.03 (.12)	30 (5.9)	481 (94.1)
Non-Persons	.02 (.17)	17 (3.3)	494 (96.7)
Step-Father	.01 (.11)	8 (1.6)	503 (98.4)
Step-Mother	.01 (.06)	8 (1.6)	503 (98.4)

Whereas Markiewicz and her colleagues (2006) identified that 93.0% of the adolescents they recruited reported best friends with 72.3% of them using their best friends for at least one attachment function, only 62.2% of the adolescents in this study reported best friends with only 60.1% using their best friends for at least one attachment function. A crosstabs analysis was conducted to determine if best friends were omitted for attachment functions because they could not be identified or that other attachment figures served these functions. Irrespective of romantic involvement, only 23 adolescents (4.5%) did not nominate either best friends or friends while 222 adolescents (43.4%) nominated both best friends and friends for attachment functions (see Table 6.4). A significant minority of all adolescents (33.1%, $n = 169$) reported nominating solely friends for attachment functions while another 19.0% ($n = 97$) of adolescents only nominated best friends. Consequently, investigating best friends and friends as independent attachment figures would result in a significant loss of data.

Table 6.4

Distributions of Best Friends, Friends, and Romantic Partners across all Adolescents

	No Romantic Partner			Romantic Partner		
	No Friend <i>f</i> (%)	Friend <i>f</i> (%)	Total <i>f</i> (%)	No Friend <i>f</i> (%)	Friend <i>f</i> (%)	Total <i>f</i> (%)
No Best						
Friend	20 (5.5)	125 (34.5)	145 (40.1)	3 (2.0)	44 (29.5)	47 (31.5)
Best						
Friend	67 (18.5)	150 (41.4)	217 (59.9)	30 (20.1)	72 (48.3)	102 (68.5)
Total	87 (24.0)	275 (76.0)	362 (100)	33 (22.1)	116 (77.9)	149 (100)

Preliminary checks of the distribution of best friends and friends across all four functions revealed that they exhibited similar patterns. Both attachment figures were therefore combined into a Friend category, where if both friends and best friends were similarly nominated for an attachment function, the higher rating was selected for that question. Both attachment figures were combined into a common category as previous studies have identified either best friends (e.g., Markiewicz et al., 2006; Trinke & Bartholomew, 1997) or friends (e.g., Friedlmeier & Granqvist, 2006; Hazan & Zeifman, 1994) as attachment targets when investigating attachment reorganization. Moreover, adolescents were previously found to often have more than one best friend (Branje, Frijns, Finkenauer, Engels, & Meeus, 2007), with nominations of best friends changing over brief periods (Brown, 2004; Brown & Klute, 2003) such that less than half of adolescents' reciprocated best friendships last longer than one year although they may remain close friends (Connolly et al., 2000; Degirmencioglu et al., 1998).

Internal consistency was high for this combined Friend category (Cronbach's $\alpha = .85$) with correlations among the four functions significant at $p < .01$ and ranging from .54 to .71. The mean, standard deviation and distribution for this combined Friend category is displayed against that of Best Friends and Friends in Table 6.5, and represents friends as an attachment target in future analyses.

Table 6.5

Distributions of Best Friend, Friend and combined Friend Nominations and Attachment Strength

Attachment Figure	Frequency ($N = 511$)		
	Attachment	Reported	Not reported
	Strength $M (SD)$	$f(\%)$	$f(\%)$
Best Friend	1.07 (1.08)	307 (60.1)	204 (39.9)
Friend	.77 (.85)	345 (67.5)	166 (32.5)
combined Friend	1.66 (.92)	474 (92.8)	37 (7.2)

6.3.5.1 Attachment Reorganization in Cross-section: Replication

The first aim of the current study was to demonstrate the process of attachment reorganization among Australian adolescents. A plan of analysis similar to Freeman and Brown's (2001) approach was undertaken with separate mixed Analysis of Variances (ANOVAs) for all adolescents, and for the subset of adolescents with current romantic relationships respectively. In the first analysis, ratings of romantic partners were excluded in order to include adolescents who did not report current romantic involvement. The second analysis included romantic partners as attachment targets, and was thus limited to respondents who reported a romantic partner. Separation Protest was incorporated as an attachment function to be explored in the model of attachment

reorganization. This contrasts with the study by Markiewicz and her colleagues (2006) who only examined attachment reorganization in relation to the three attachment functions of Proximity-seeking, Safe Haven, and Secure Base.

Two separate mixed Analysis of Variances (ANOVAs) were employed to explore the differences in the use of both targets of attachment, and the attachment functions which these targets fulfilled between early and late adolescents, and if these differences further varied according to gender and the presence (or absence) of a romantic relationship. The first ANOVA ($N = 511$) comprised all adolescents surveyed and focuses on identifying adolescents' strength of attachment to three attachment figures of mothers, fathers, and friends as a function of their age, gender, and romantic status. The second ANOVA ($n = 170$) was of a similar design and concentrates exclusively on the subset of romantically-involved adolescents. It looks additionally at the role of the romantic partner as an attachment target. The analyses thus systematically progress from identifying the attachment trends and utility of core attachment targets in a general cross-sectional adolescent population to examining in more detail, the attachment reorganization that occurs with the inclusion of the romantic partner in the attachment hierarchy.

6.3.5.2 Entire Adolescent Sample with Three Targets (Mother, Father, and Friend)

The first analysis ($N = 511$) was a five-way mixed ANOVA design of 4 (Function – Proximity-seeking, Safe Haven, Separation Protest, and Secure Base) x 3 (Target – Mother, Father, and Friend) x 2 (Cohort - Early Adolescents vs. Late Adolescents) x 2 (Sex - Male vs. Female) x 2 (Romantic Status – No Romantic Relationship vs. In a Romantic Relationship), with the first two factors within-subjects, and the next three factors between-subjects. The mean age of early adolescent males ($n = 74$) and females

($n = 109$) were 12.97 years ($SD = .43$) and 12.75 years ($SD = .55$) respectively. For late adolescent males ($n = 90$) and females ($n = 238$), the mean age were 17.23 years ($SD = .70$) and 17.10 years ($SD = .60$) respectively. In spite of moderate skewness, the data were deemed representative of the populations and not transformed (Pallant, 2005). Moreover, the sample size was large and analysis of variance is very robust to non-normality of data (Tabachnick & Fidell, 2001). As scores for both Target and Function violated the assumption of independence, a strict level of significance ($p < .01$) was utilized and Bonferroni adjustments made for all post-hoc multiple comparisons.

Results of the Function by Target by Cohort by Sex by Romantic Status ($4 \times 3 \times 2 \times 2 \times 2$) ANOVA revealed significant main effects for Function, Target, Cohort, and Romantic Status. All four main effects were qualified by significant two-way interactions and three-way interactions. Given the complexity of the current ANOVA design and inherent challenges in understanding the results, a ‘layering’ approach was adopted in explaining the results. The results are presented systematically in the order of (1) the main effects, (2) the two-way interactions, and lastly, (3) the three-way interactions. At each ‘layer’ of results, a more fine-grained understanding of the processes in adolescent attachment is derived as the analyses tease apart the significant higher-order interactions.

6.3.5.2.1 Main Effects

Significant main effects were derived for Function, $F(2.71, 1363.06) = 34.75, p < .001$, partial $\eta^2 = .065$, Target, $F(1.49, 750.20) = 66.62, p < .001$, partial $\eta^2 = .117$, Cohort, $F(1, 503) = 39.62, p < .001$, partial $\eta^2 = .073$, and Romantic Status, $F(1, 503) = 28.53, p < .001$, partial $\eta^2 = .054$. The main effect for Sex, $F(1, 503) = .08, p = .78$,

partial $\eta^2 = .000$, was not statistically significant in the present analysis but was implicated in three of the higher-order interactions.

Function

The main effect for Function, $F(2.71, 1363.06) = 34.75, p < .001$, partial $\eta^2 = .065$, demonstrated significant differences in adolescents' ratings of the four attachment functions. Using a Bonferroni adjustment of $p = .008$ (i.e., $.05/6$), post-hoc pairwise comparisons revealed Secure Base ($M = 1.26, SE = .03$) was the most highly rated function and significantly different to both Separation Protest ($M = 1.05, SE = .03$) and Proximity-seeking ($M = 1.04, SE = .02$), but not Safe Haven ($M = 1.19, SE = .02$). In turn, Safe Haven rated significantly higher than Separation Protest and Proximity-seeking. There was no significant difference in adolescents' ratings for Separation Protest and Proximity-seeking. These results suggest two distinct groups in adolescents' ratings of attachment functions, with Secure Base and Safe Haven rated similarly but significantly higher than Separation Protest and Proximity-seeking, which were also rated similarly. The attachment functions are four distinct but interrelated classes of behaviors which define attachment (Bowlby, 1969/1982), and no predictions were made of them. A significant main effect for Function provides evidence of rank within adolescents' ratings of the four functions, and is not otherwise theoretically meaningful for the present study.

Target

The main effect for Target, $F(1.49, 750.20) = 66.62, p < .001$, partial $\eta^2 = .117$, revealed significant differences in adolescents' use of attachment targets. Post-hoc pairwise comparisons using a Bonferroni adjustment of $p = .017$ (i.e., $.05/3$) revealed that friends ($M = 1.52, SE = .05$) were selected most as an attachment target, and

significantly more than mothers ($M = 1.25, SE = .06$) and fathers ($M = .64, SE = .04$). Mothers were utilized significantly more than fathers, with fathers selected last as targets of attachment. There appears to be a hierarchy in the use of attachment figures with adolescents turning most to friends, and fathers the least.

Cohort

The main effect for Cohort, $F(1, 503) = 39.62, p < .001$, partial $\eta^2 = .073$, found significant differences in adolescents' strength of attachment as a function of age. Early adolescents ($M = 1.27, SE = .04$) reported higher attachment strength than did late adolescents ($M = 1.00, SE = .02$). Early adolescents seem to utilize mothers, fathers and friends more as attachment targets compared to late adolescents.

Romantic Status

The main effect of Romantic Status, $F(1, 503) = 28.53, p < .001$, partial $\eta^2 = .054$, revealed significant differences in reported attachment strength between adolescents in a romantic relationship and those who were not romantically-involved. Adolescents not in a romantic relationship ($M = 1.25, SE = .02$) reported higher attachment strength than their romantically-involved peers ($M = 1.02, SE = .04$). Adolescents with romantic partners appear to use mothers, fathers, and friends less as attachment targets compared to romantically-uninvolved adolescents. The reduction in use of these targets is suggested to correspond to an increased utility of the romantic partner as an attachment target by the romantically-involved adolescents (Feeney, 2004). This result is more fully examined in the subsequent ANOVA (see 6.3.5.3).

6.3.5.2.2 Two-way Interactions

Cohort by Sex

Although there was a significant Cohort by Sex interaction, $F(1, 503) = 7.97, p = .005$, partial $\eta^2 = .016$, post-hoc independent samples t-tests conducted using a Bonferroni adjustment of $p = .013$ (i.e., $.05/4$) did not find significant differences in attachment strength between early and late adolescents according to sex. Both early adolescent males and females reported significantly higher attachment strength than late adolescent males, $t(162) = 5.59, p < .001$, and females, $t(345) = 6.38, p < .001$, respectively. However, attachment ratings were similar between males and females for early adolescents, $t(181) = .37, ns$, and also late adolescents, $t(326) = 2.09, ns$. Interpretation of results thus cannot be made despite the presence of a significant interaction aside from confirming the main effect of age wherein early adolescents report higher total attachment strength than late adolescents. Means and standard deviations are presented in Table 6.6.

Table 6.6

Means and Standard Deviations of Mean Attachment Strength for Sex According to Cohort

Sex	Early Adolescents			Late Adolescents		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Male	74	1.32	.39	90	.99	.36
Female	109	1.34	.36	238	1.08	.35

Target by Function

A significant Target by Function interaction, $F(4.39, 2209.40) = 61.99, p < .001$, partial $\eta^2 = .110$, found adolescents' preferences for attachment targets to significantly differ depending on the attachment function met (see Figure 6.4). Post-hoc paired samples t-tests using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) revealed that for Proximity-seeking, friends were selected most and significantly more than mothers, $t(510) = -17.45, p < .001$, and fathers, $t(510) = -26.16, p < .001$. Mothers were used significantly more for Proximity-seeking relative to fathers, $t(510) = 9.50, p < .001$. Friends were also chosen most for Safe Haven and significantly more compared with mothers, $t(510) = -5.75, p < .001$, and fathers, $t(510) = -18.39, p < .001$. Fathers were used least for Safe Haven, and significantly less than mothers, $t(510) = 16.92, p < .001$. For Separation Protest, adolescents reported similar attachment strength to mothers and friends, $t(510) = .43, ns$. Mothers, $t(510) = 12.18, p < .001$, and friends, $t(510) = -7.34, p < .001$, were both used significantly more for Separation Protest relative to fathers. Similar utility of mothers and friends for Secure Base was also reported, $t(510) = .85, ns$. Fathers were chosen least for Secure Base, and significantly less than mothers, $t(510) = 14.59, p < .001$, and friends, $t(510) = -8.26, p < .001$. Means and standard deviations are reported in Table 6.7.

The interactive effect derives from the transition of friends from clear favorites for Proximity-seeking and Safe Haven, to sharing the role of main attachment target with mothers for Separation Protest and Secure Base. Fathers were least used for all four attachment functions. These results suggest while adolescents turn most to friends for Proximity-seeking and Safe Haven, they use friends and mothers similarly for Separation Protest and Secure Base. Fathers consistently feature as the last target option for all attachment functions.

Table 6.7

Means and Standard Deviations of Mean Attachment Strength for Function According to Target

Target (N = 511)	Proximity-				Separation			
	seeking		Safe Haven		Protest		Secure Base	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother	.78	.96	1.30	1.21	1.29	1.22	1.56	1.23
Father	.39	.70	.48	.77	.68	.92	.79	.95
Friend	2.07	1.00	1.82	1.09	1.25	1.16	1.48	1.19

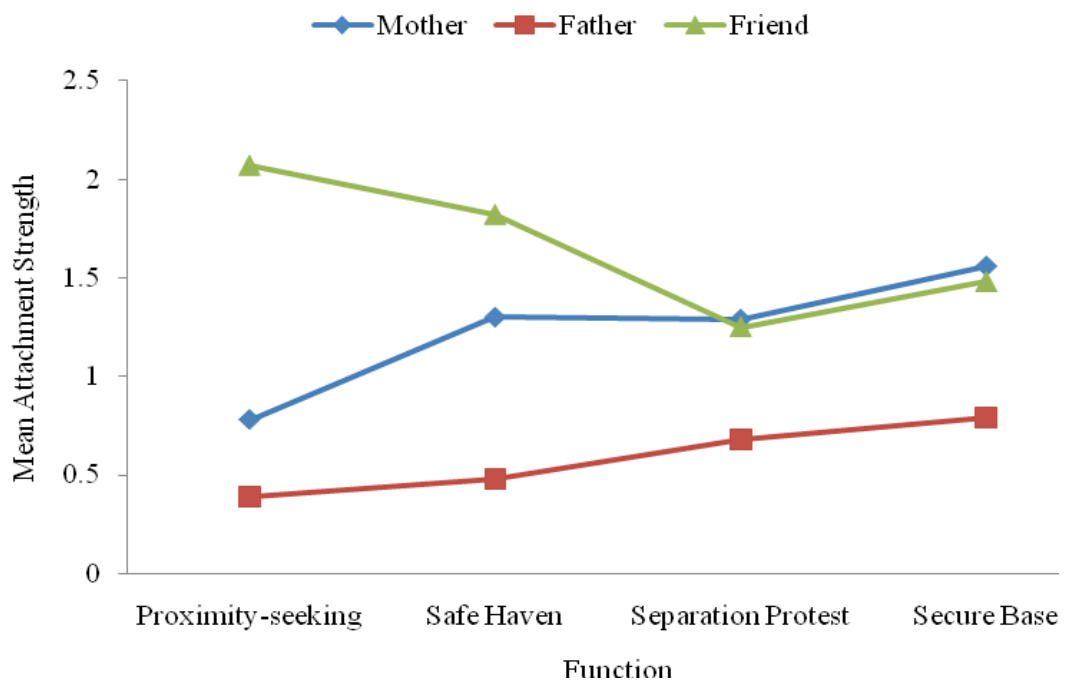


Figure 6.4. Mean Attachment Strength for Function According to Target.

Target by Cohort

There was a significant Target by Cohort interaction, $F(1.49, 750.20) = 28.59, p < .001$, partial $\eta^2 = .054$. As seen in Figure 6.5, adolescents' preferences for specific attachment targets differed according to their age. Means and standard deviations are presented in Table 6.8. All post-hoc multiple comparisons were conducted using a Bonferroni adjustment of $p = .006$ (i.e., $.05/9$). Post-hoc independent samples t-tests revealed early adolescents used mothers, $t(509) = 8.96, p < .001$, and fathers, $t(293.65) = 8.98, p < .001$, significantly more for attachment needs compared with late adolescents. Conversely, late adolescents turned significantly more to friends, $t(509) = -6.07, p < .001$, than early adolescents. Post-hoc paired samples t-tests revealed early adolescents clearly preferred mothers as their attachment target over friends, $t(182) = 3.20, p = .002$, and fathers, $t(182) = 11.68, p < .001$. Friends were also chosen significantly more than fathers, $t(182) = -3.41, p = .001$. Late adolescents selected their friends most as a target of attachment and significantly more than mothers, $t(327) = -10.46, p < .001$, and fathers, $t(327) = -21.79, p < .001$. Mothers too were significantly preferred over fathers to fulfill attachment needs, $t(327) = 11.85, p < .001$.

The interaction occurs wherein late adolescents report higher attachment strength to friends but early adolescents report higher attachment to mothers and fathers. Early adolescents continue to orient towards their parents, especially mothers, while late adolescents turn to their friends for attachment needs. Fathers are the least used attachment target for both cohorts of adolescents.

Table 6.8

Means and Standard Deviations of Mean Attachment Strength for Target According to Cohort

Cohort	Mother		Father		Friend	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Early Adolescents (<i>n</i> = 183)	1.72	.94	.95	.76	1.33	.92
Late Adolescents (<i>n</i> = 328)	.96	.90	.38	.56	1.83	.88

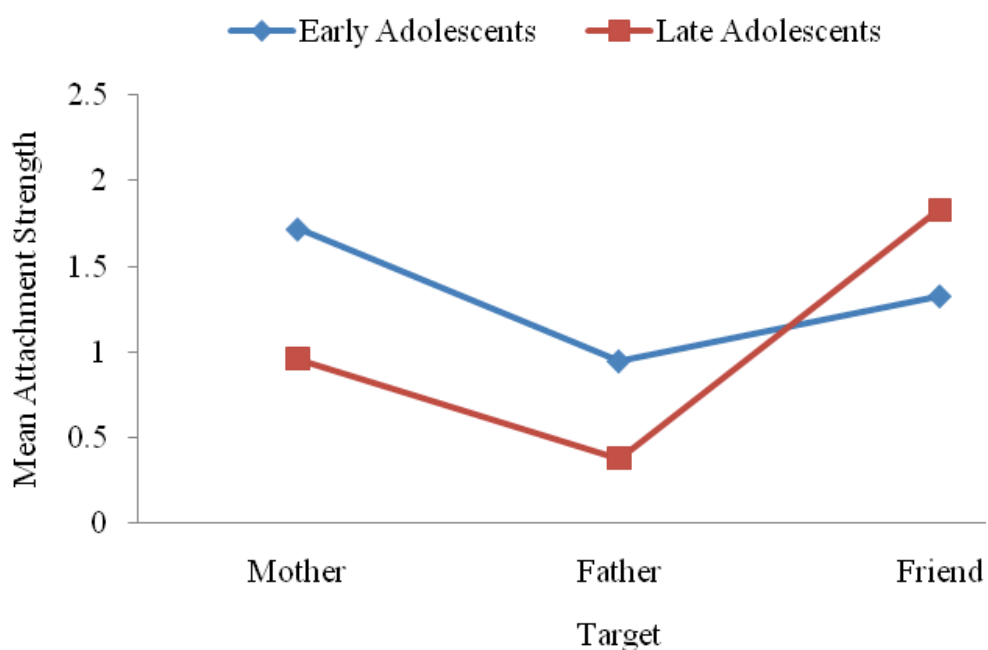


Figure 6.5. Mean Attachment Strength for Target According to Cohort.

Target by Sex

Adolescents' preferences for specific attachment targets also differed according to gender as revealed by the significant Target by Sex interaction, $F(1.49, 750.20) = 10.52$, $p < .001$, partial $\eta^2 = .020$ (see Figure 6.6). Means and standard deviations are found in Table 6.9. All post-hoc multiple comparisons were conducted using a Bonferroni correction of $p = .006$ (i.e., $.05/9$). Post-hoc independent-samples t-tests revealed that while adolescent males and females used mothers similarly as an attachment target, $t(509) = -.45$, *ns*, males reported using fathers significantly more than did females, $t(280.04) = -4.46$, $p < .001$. Relative to adolescent males, adolescent females reported significantly more attachment to friends, $t(299.32) = 4.72$, $p < .001$. Post-hoc paired samples t-tests revealed adolescent females selected friends most and significantly more than mothers, $t(346) = -6.48$, $p < .001$ and fathers, $t(346) = -18.22$, $p < .001$, as their target of attachment. Mothers were likewise used significantly more than fathers, $t(346) = 15.24$, $p < .001$, for attachment functions. In turn, adolescent males selected friends and mothers similarly for attachment needs, $t(163) = -.85$, *ns*. Friends, $t(163) = -5.02$, $p < .001$, and mothers, $t(163) = 6.98$, $p < .001$, were both significantly preferred to fathers as an attachment target.

Whereas adolescent males and females reported similar attachment strength to mothers, the interaction occurs in the use of other attachment targets with males using fathers significantly more than females, and females using friends significantly more compared to males. This suggests whilst adolescent females predominantly use friends for attachment needs, adolescent males seek attachment needs similarly in both friends and mothers. Adolescent males also utilize their fathers significantly more than do adolescent females. The unfortunate fathers are again the least used attachment target, regardless of gender.

Table 6.9

Means and Standard Deviations of Mean Attachment Strength for Target According to Sex

Sex	Mother		Father		Friend	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Male (<i>n</i> = 164)	1.26	.98	.79	.75	1.37	.95
Female (<i>n</i> = 347)	1.22	.99	.49	.64	1.79	.88

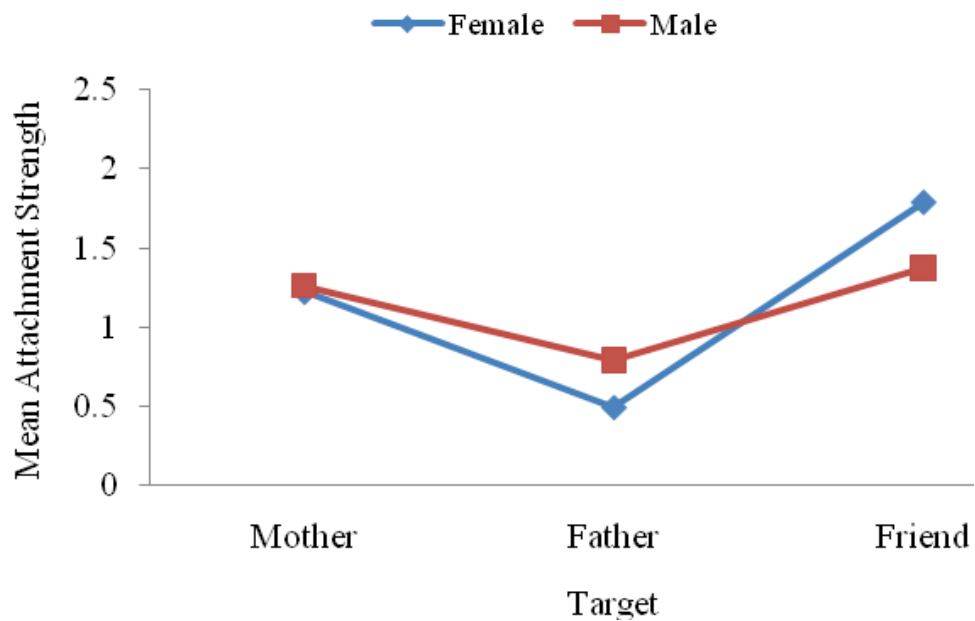


Figure 6.6. Mean Attachment Strength for Target According to Sex.

6.3.5.2.3 Three-way Interactions

Further differences in utility of attachment targets for specific attachment functions were demonstrated according to Sex and Romantic Status. These two significant interactions of Target by Function by Sex, $F(4.39, 2209.40) = 5.49, p < .001$, partial $\eta^2 = .011$, and Target by Function by Romantic Status, $F(4.39, 2209.40) = 3.20, p = .01$, partial $\eta^2 = .006$, are presented below. To facilitate understanding of the results, the three-way interactions are first examined at the level of the simple interaction with subsequent comparisons made across the pair of simple interactions for each three-way interaction.

Target by Function by Sex

The significant interaction of Target by Function by Sex, $F(4.39, 2209.40) = 5.49, p < .001$, partial $\eta^2 = .011$, revealed distinct gender preferences among adolescents for specific attachment targets in fulfilling different attachment needs. Two-way within-subjects ANOVAs (Target (3) x Function (4)) conducted at each level of Sex (Male and Female) revealed significant simple interactions for both males, $F(4.27, 695.79) = 46.65, p < .001$, partial $\eta^2 = .223$, and females, $F(4.31, 1491.03) = 83.72, p < .001$, partial $\eta^2 = .195$. Post-hoc multiple comparisons t-tests using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) were conducted for adolescent males and females separately. Means and standard deviations for adolescent males and females are presented in Table 6.10.

Table 6.10

Means and Standard Deviations of Mean Attachment Strength for Function According to Target and Sex

Target (<i>N</i> = 511)	Proximity- seeking		Safe Haven		Separation Protest		Secure Base	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Male (<i>n</i> = 164)								
Mother	.74	.93	1.45	1.23	1.23	1.18	1.62	1.22
Father	.55	.80	.77	.90	.77	.90	1.07	1.05
Friend	1.92	1.07	1.34	1.15	1.07	1.17	1.16	1.18
Female (<i>n</i> = 347)								
Mother	.79	.98	1.24	1.19	1.32	1.23	1.53	1.24
Father	.31	.63	.34	.66	.64	.93	.66	.87
Friend	2.14	.96	2.04	.99	1.34	1.15	1.63	1.16

As illustrated in Figure 6.7a, post-hoc comparisons revealed that adolescent males selected friends most for Proximity-seeking and significantly more than mothers, $t(163) = -9.10, p < .001$, and fathers, $t(163) = -10.95, p < .001$. Mothers and fathers were used similarly for Proximity-seeking, $t(163) = 2.73, ns$. For Safe Haven, adolescent males selected mothers and friends similarly, $t(163) = .67, ns$, and significantly preferred both mothers, $t(163) = 7.91, p < .001$, and friends, $t(163) = -4.07, p < .001$, over fathers. Adolescent males used mothers for Separation Protest to a similar extent as friends, $t(163) = 1.11, ns$, although significantly more than fathers, $t(163) = 5.84, p < .001$. In turn, friends and fathers were utilized similarly for Separation Protest, $t(163) = -2.91, ns$. Mothers were selected most for Secure Base and significantly more than fathers,

$t(163) = 5.91, p < .001$, though not friends, $t(163) = 2.76, ns$. Adolescent males also selected friends and fathers similarly for Secure Base, $t(163) = -.60, ns$.

As seen from Figure 6.7b, post-hoc comparisons revealed that adolescent females preferred friends most for Proximity-seeking, and chose them significantly more than mothers, $t(346) = -14.92, p < .001$, and fathers, $t(346) = -25.16, p < .001$. Mothers were also used significantly more for Proximity-seeking compared with fathers, $t(346) = 9.74, p < .001$. Friends were again selected most for Safe Haven and significantly more than mothers, $t(346) = -7.86, p < .001$, and fathers, $t(346) = -22.06, p < .001$.

Adolescent females likewise reported significantly greater attachment strength to mothers than fathers for this function, $t(346) = 15.17, p < .001$. For Separation Protest, friends and mothers were used similarly by adolescent females as an attachment target, $t(346) = -.21, ns$. Friends, $t(346) = -7.39, p < .001$, and mothers, $t(346) = 10.75, p < .001$, were however chosen significantly more than fathers for Separation Protest. Friends and mothers were also chosen similarly for Secure Base by adolescent females, $t(346) = -.87, ns$. Fathers were chosen least for Secure Base, and significantly less than friends, $t(346) = -10.12, p < .001$, and mothers, $t(346) = 13.80, p < .001$.

Post-hoc independent samples t-tests conducted between the sexes using a Bonferroni correction of $p = .004$ (i.e., $.05/12$) revealed that for Proximity-seeking, adolescents males and females did not significantly differ in their attachment ratings for either mothers, $t(509) = .55, ns$, or friends, $t(292.19) = 2.22, ns$. Rather, adolescent males turned to fathers significantly more for Proximity-seeking relative to adolescent females, $t(260.35) = -3.29, p = .001$. Adolescent males and females also reported similar attachment strength to mothers for Safe Haven, $t(509) = -1.85, ns$. Adolescent males however used fathers significantly more for Safe Haven than did adolescent females, $t(248.15) = -5.45, p < .001$, whilst adolescent females chose friends significantly more for this function compared to adolescent males, $t(279.63) = 6.74, p < .001$. For

Separation Protest, adolescent males and females did not significantly differ in their attachment ratings for mothers, $t(509) = .70, ns$, fathers, $t(509) = -1.60, ns$, and friends, $t(509) = 2.48, ns$. Adolescent males and females likewise reported similar attachment ratings of mothers for Secure Base, $t(509) = .75, ns$, with males choosing fathers significantly more for this function relative to females, $t(273.57) = -4.32, p < .001$. Adolescent females in turn used friends significantly more for Secure Base than did adolescent males, $t(509) = 4.28, p < .001$.

The relative positioning of friends as an attachment target particularly for Safe Haven and Secure Base by adolescent males and females creates the interactive effect in this three-way interaction. Adolescent males and females both demonstrate a clear preference for friends as the main attachment target for Proximity-seeking. This is a preference maintained by adolescent females for Safe Haven whilst adolescent males use mothers and friends similarly for this function. Adolescent males and females did not differentiate between mothers and friends as the main target for Separation Protest. Mothers and friends were also chosen to a similar extent for Secure Base by both sexes, with adolescent females distinctly preferring them over fathers. By contrast, adolescent males chose mothers significantly more than fathers for Secure Base, but selected friends and fathers similarly. Fathers were overall used more by adolescent males than females, but consistently used the least by both sexes for all four attachment functions.

Overall, adolescent females evinced a greater reliance on friends for attachment needs compared with adolescent males. Adolescent females distinctively preferred friends for Proximity-seeking and Safe Haven while using mothers and friends equally for Separation Protest and Secure Base. Adolescent males demonstrated a clear preference for friends only for Proximity-seeking, and used friends and mothers similarly for Safe Haven, Separation Protest, and Secure Base. Attachment strength to mothers was however similar between the sexes for all attachment functions. Other

gender differences at the level of specific attachment functions were found. Adolescent females significantly preferred friends and adolescent males, their fathers, for both Safe Haven and Secure Base. Adolescent males also turned significantly more to fathers for Proximity-seeking compared with adolescent females. Both genders did use friends similarly for Proximity-seeking and Separation Protest, and also fathers for the latter function.

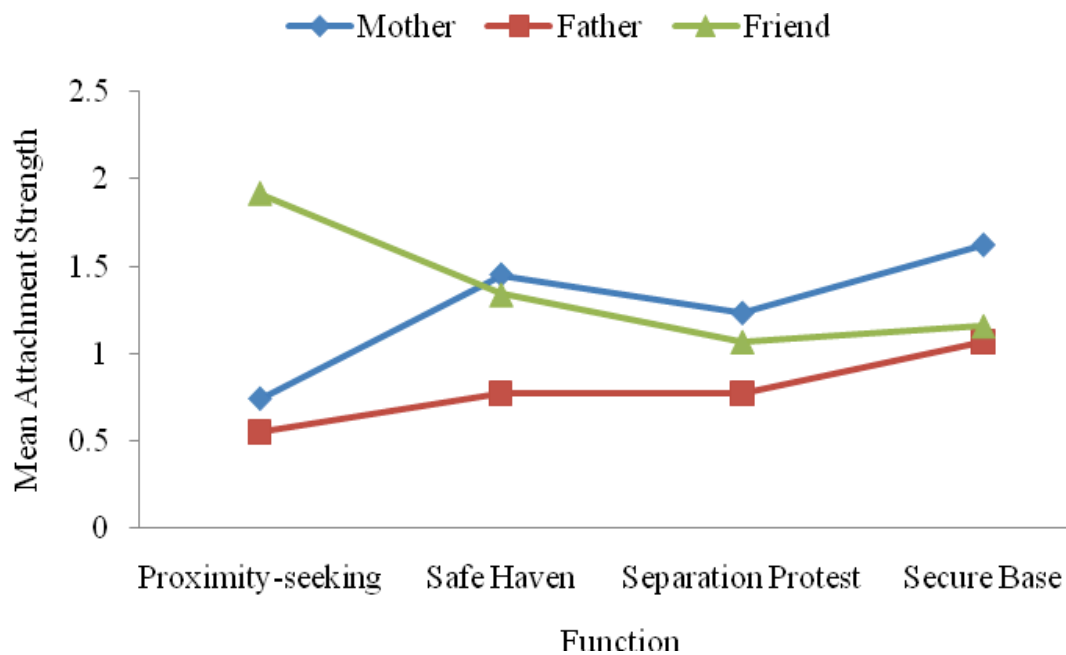


Figure 6.7a. Mean Attachment Strength for Function According to Target for Males.

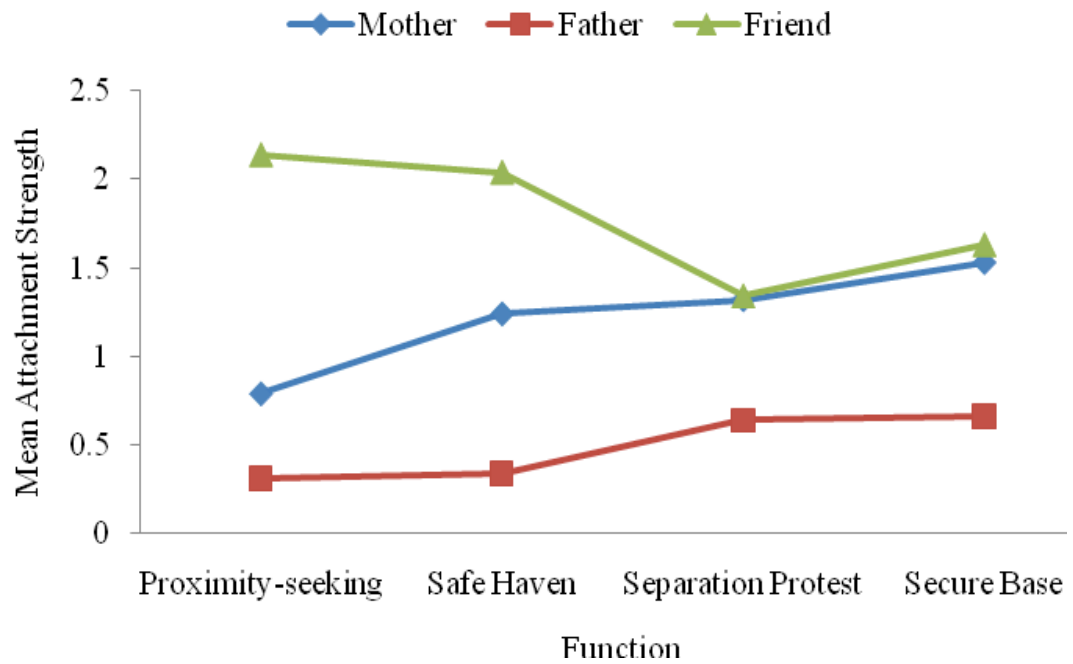


Figure 6.7b. Mean Attachment Strength for Function According to Target for Females.

Target by Function by Romantic Status

The significant Target by Function by Romantic Status interaction, $F(4.39, 2209.40) = 3.20$, $p = .01$, partial $\eta^2 = .006$, demonstrated adolescents' preferences for specific attachment targets to fulfill different attachment needs also varied according to their current romantic status. Two-way within-subjects ANOVAs (Target (3) by Function (4)) conducted at each level of Romantic Status (No Romantic Relationship and In a Romantic Relationship) revealed significant simple interactions for both adolescents without a romantic relationship, $F(4.38, 1489.46) = 99.13$, $p < .001$, partial $\eta^2 = .226$, and for adolescents in a romantic relationship, $F(4.23, 714.00) = 24.35$, $p < .001$, partial $\eta^2 = .126$. Post-hoc multiple comparisons t-tests using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) were conducted for adolescents without a romantic relationship, and romantically-involved adolescents separately. Means and standard deviations for adolescents without a romantic relationship, and adolescents in a romantic relationship are presented in Table 6.11.

Table 6.11

Means and Standard Deviations of Mean Attachment Strength for Function According to Target and Romantic Status

Target (<i>N</i> = 511)	Proximity- seeking		Safe Haven		Separation Protest		Secure Base	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No Romantic Relationship (<i>n</i> = 341)								
Mother	.85	1.01	1.47	1.24	1.45	1.26	1.71	1.24
Father	.46	.74	.56	.81	.78	.96	.89	.98
Friend	2.20	1.01	1.84	1.12	1.28	1.22	1.46	1.18
In a Romantic Relationship (<i>n</i> = 170)								
Mother	.61	.84	.96	1.06	.96	1.06	1.27	1.16
Father	.25	.58	.32	.67	.47	.79	.61	.87
Friend	1.81	.94	1.76	1.04	1.20	1.04	1.53	1.19

As illustrated in Figure 6.8a, post-hoc comparisons revealed that for adolescents not in a romantic relationship, friends were chosen most for Proximity-seeking and significantly more than mothers, $t(340) = -13.90, p < .001$, and fathers, $t(340) = -20.91, p < .001$. Mothers were also chosen significantly more compared to fathers for this function, $t(340) = 7.68, p < .001$. For Safe Haven, friends were selected most and significantly more relative to mothers, $t(340) = -3.25, p = .001$, and fathers, $t(340) = -13.77, p < .001$. Mothers were significantly preferred to fathers for Safe Haven too, $t(340) = 14.72, p < .001$. Romantically-uninvolved adolescents however used mothers and friends similarly for Separation Protest, $t(340) = 1.55, ns$. Fathers were selected least for Separation Protest and significantly less than mothers, $t(340) = 10.59, p < .001$,

and friends, $t(340) = -4.81, p < .001$. Adolescents without romantic relationships also rated mothers and friends similarly for Secure Base, $t(340) = 2.11, ns$. Mothers, $t(340) = 12.27, p < .001$, and friends, $t(340) = -5.52, p < .001$, were both chosen significantly more for Secure Base relative to fathers.

Post-hoc comparisons revealed that like their romantically-uninvolved peers, adolescents with romantic relationships chose friends most for Proximity-seeking and significantly more than mothers, $t(169) = -10.87, p < .001$, and fathers, $t(169) = -16.12, p < .001$ (see Figure 6.8b). Mothers were likewise utilized significantly more for Proximity-seeking relative to fathers, $t(169) = 5.62, p < .001$. For Safe Haven, friends were selected most and significantly more compared with mothers, $t(169) = -5.84, p < .001$, and fathers, $t(169) = -12.80, p < .001$. Significantly greater attachment strength to mothers than fathers for this function was also reported, $t(169) = 8.56, p < .001$. Regarding Separation Protest, friends and mothers were chosen similarly by romantically-involved adolescents, $t(169) = -1.85, ns$. Friends, $t(169) = -6.49, p < .001$, and mothers, $t(169) = 6.09, p < .001$, were however both significantly preferred over fathers for Separation Protest. Adolescents with romantic partners also used friends similarly to mothers for Secure Base, $t(169) = -1.62, ns$. Both friends, $t(169) = -6.66, p < .001$, and mothers, $t(169) = 7.93, p < .001$, were selected significantly more than fathers for Secure Base, with fathers the least used attachment target of the romantically-involved adolescents.

Post-hoc independent samples t-tests conducted using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) between adolescents not in romantic relationships and those who are revealed no significant differences in attachment strength to mothers for Proximity-seeking, $t(399.60) = 2.84, ns$. Adolescents who did not have romantic partners rated fathers, $t(419,16) = 3.49, p = .001$, and friends, $t(509) = 4.20, p < .001$, significantly higher for Proximity-seeking than did adolescents who were romantically-involved. For

Safe Haven, adolescents without romantic relationships reported significantly higher attachment strength to mothers, $t(389.45) = 4.82, p < .001$, and fathers, $t(401.05) = 3.61, p < .001$, than did adolescents in romantic relationships. Both groups of adolescents used friends similarly for Safe Haven, $t(509) = .84, ns$. Likewise for Separation Protest, adolescents not in a romantic relationship rated mothers, $t(394.58) = 4.64, p < .001$, and fathers, $t(404.78) = 3.94, p < .001$, significantly higher compared with their romantically-involved peers. Both adolescents with and without romantic relationships did not significantly differ in attachment strength to friends for Separation Protest, $t(387.92) = .70, ns$. Romantically-uninvolved adolescents reported significantly higher attachment strength to mothers, $t(509) = 3.84, p < .001$, and fathers, $t(375.04) = 3.31, p = .001$ for Secure Base relative to adolescents with romantic partners. Similar utility of friends for Secure Base was reported, $t(509) = -.59, ns$.

The interactive effect in this three-way interaction results from the relative positioning of friends as an attachment target particularly for Separation Protest and Secure Base by romantically-uninvolved adolescents and adolescents in romantic relationships. Friends are unmistakably the primary attachment target of Proximity-seeking for both adolescents with and without a romantic relationship. This distinction is maintained for Safe Haven by adolescents with romantic partners but becomes less obvious for romantically-uninvolved adolescents who demonstrate an increase in mother attachment strength. Both groups of adolescents use mothers and friends similarly for Separation Protest and Secure Base. However, trends indicate that adolescents without a romantic relationship use mothers and romantically-involved adolescents their friends, more for these two functions. Fathers are least used for all attachment functions by both groups regardless of romantic status.

Overall, adolescents not in romantic relationships and those who were romantically-involved reported similar usage of mothers, fathers and friends for all attachment

functions. Both groups chose friends most for Proximity-seeking and Safe Haven, and used mothers and friends similarly for Separation Protest and Secure Base. They differed, however, in the amount of reliance on each attachment target. Romantically-uninvolved adolescents used both parents significantly more than adolescents with romantic partners but relied on friends to a similar extent for Safe Haven, Separation Protest, and Secure Base. For Proximity-seeking, adolescents without romantic partners reported higher reliance on friends and fathers than did adolescents who were romantically-involved. Both groups also used mothers similarly for this function. Thus, current romantic involvement appears to alter the extent of reliance on mothers and friends by these two groups of adolescents for Proximity-seeking.

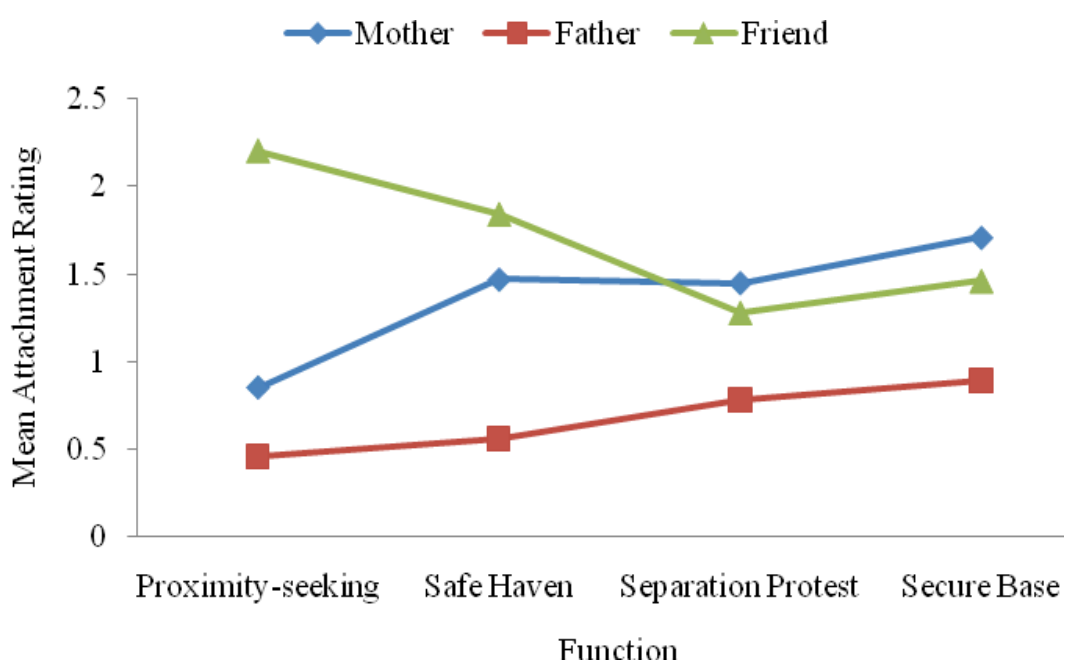


Figure 6.8a. Mean Attachment Strength for Function According to Target for Adolescents with No Romantic Relationship.

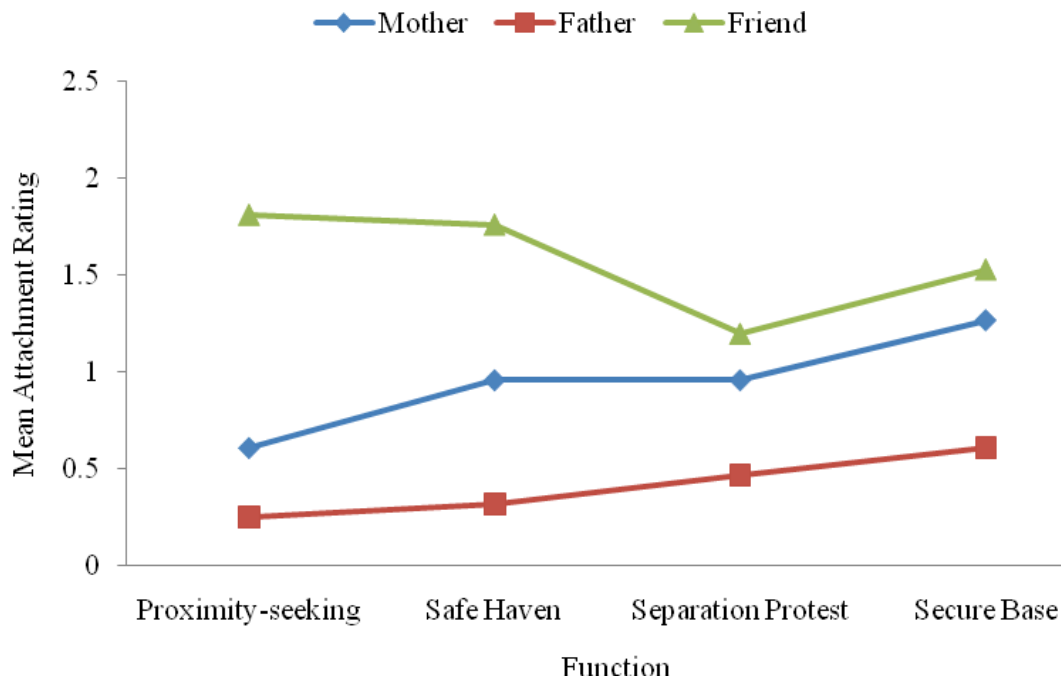


Figure 6.8b. Mean Attachment Strength for Function According to Target for Adolescents In a Romantic Relationship.

6.3.5.3 Adolescents In a Romantic Relationship Subsample with Four Targets (Mother, Father, Friend, Romantic Partner)

To enable an examination of romantic partners as attachment targets, a four-way mixed ANOVA design of 4 (Function – Proximity-seeking, Safe Haven, Separation Protest, and Secure Base) x 4 (Target – Mother, Father, Friend, and Romantic Partner) x 2 (Cohort - Early Adolescents vs. Late Adolescents) x 2 (Sex - Male vs. Female) was conducted only for adolescents with romantic relationships, with the first two factors within-subjects, and the latter two factors, between-subjects. The mean age of romantically-involved early adolescent males ($n = 27$) and females ($n = 10$) were 12.93 years ($SD = .38$) and 13.03 years ($SD = .70$) respectively. For romantically-involved late adolescents, the mean age of males ($n = 28$) was 17.34 years ($SD = .71$), and 17.08 years ($SD = .58$) for females ($n = 105$). A significant decrease in the number of

adolescents surveyed was expected as a smaller percentage of adolescents reported current involvement in a romantic relationship, particularly amongst early adolescents. The samples sizes of early and late romantically-involved adolescent males were similar. However, ten times more late adolescent females than early adolescent females reported romantic relationships, resulting in unequal sample sizes. The data was moderately skewed but deemed representative of the population and not transformed (Pallant, 2005). Scores for both Target and Function violated the assumptions of independence, thus a strict level of significance ($p < .01$) was applied and Bonferroni adjustments made for all post-hoc multiple comparisons.

Results of the Function by Target by Cohort by Sex (4 x 3 x 2 x 2) ANOVA ($n = 170$) revealed a significant main effect for Target only, $F(2.38, 394.58) = 21.02, p < .001$, partial $\eta^2 = .112$. This main effect was further qualified by two two-way interactions. Unlike the previous ANOVA conducted with the entire adolescent sample, the main effects for Function, $F(2.75, 456.28) = 1.84, p = .15$, partial $\eta^2 = .011$ and Cohort, $F(1, 166) = .35, p = .55$, partial $\eta^2 = .002$, were not significant. It appears the small number of early romantically-involved adolescents ($n = 37$) especially resulted in reduced power and sensitivity to find significant results. The main effect of Sex was also not significant, $F(1, 166) = .83, p = .36$, partial $\eta^2 = .005$. A ‘layering’ approach was again adopted for presenting the results, beginning with the main effect and progressing into the two-way interactions.

6.3.5.3.1 Main Effects

Target

The significant main effect for Target, $F(2.38, 394.58) = 21.02, p < .001$, partial $\eta^2 = .112$, revealed significant differences in the utility of attachment targets by adolescents

in romantic relationships. Using a Bonferroni adjustment of $p = .008$ (i.e., $.05/6$), post-hoc pairwise comparisons revealed that romantic partners ($M = 1.48, SE = .11$), friends ($M = 1.45, SE = .09$), and mothers ($M = 1.09, SE = .09$) were utilized similarly for attachment functions. Fathers ($M = .54, SE = .05$) were least used among the attachment targets and significantly less than romantic partners, friends, and mothers. Overall, romantically-involved adolescents did not differentiate between romantic partners, friends and mothers, and preferred all three to fathers as targets of attachment.

6.3.5.3.2 Two-way Interactions

Target by Cohort

Preferences for specific attachment targets were further qualified by a significant Target by Cohort interaction, $F(2.38, 394.58) = 16.46, p < .001$, partial $\eta^2 = .090$, that found significant differences in the use of attachment targets between early and late romantically-involved adolescents (see Figure 6.9). All post-hoc multiple comparisons were conducted using a Bonferroni adjustment of $p = .003$ (i.e., $.05/16$). Post-hoc independent samples t-tests revealed that early adolescents selected mothers, $t(168) = 4.80, p < .001$, and fathers, $t(44.44) = 5.91, p < .001$, significantly more relative to late adolescents. Romantic partners were used significantly more for attachment needs by late adolescents than early adolescents, $t(168) = -5.39, p < .001$. Friends, $t(168) = -2.73, ns$, were similarly chosen by early and late adolescents.

Post-hoc paired samples t-tests revealed early adolescents used mothers to a similar extent as friends, $t(36) = 1.14, ns$, and romantic partners, $t(36) = 2.55, ns$. Friends and romantic partners were chosen similarly, $t(36) = 1.54, ns$, with neither friends, $t(36) = -1.17, ns$, nor romantic partners, $t(36) = .52, ns$, selected significantly more than fathers as a target of attachment. Early adolescents clearly preferred mothers over fathers only

as an attachment target, $t(36) = 4.19, p < .001$. In contrast, late adolescents selected romantic partners most and significantly more than mothers, $t(132) = -8.85, p < .001$, and fathers, $t(132) = -15.81, p < .001$, but not friends, $t(132) = -1.41, ns$. Friends were significantly preferred over mothers, $t(132) = -7.51, p < .001$, and fathers, $t(132) = -15.20, p < .001$, with mothers also used significantly more than fathers as an attachment target, $t(132) = 7.83, p < .001$. Means and standard deviations are found in Table 6.12.

The interaction occurs where late adolescents report higher attachment strength to romantic partners while early adolescents demonstrate greater attachment strength to mothers and fathers. Reported attachment strength to friends was similar between early and late adolescents. Whereas late adolescents prefer friends and romantic partners over parents to satisfy attachment needs, early adolescents use parents more than do late adolescents for attachment functions. Early adolescents chose mothers, friends and romantic partners equivalently as attachment targets, with these peers used similarly to fathers for attachment functions. As an attachment target, fathers were the last choice for late adolescents, but used distinctly less than mothers only by early adolescents.

Table 6.12

Means and Standard Deviations of Mean Attachment Strength for Target According to Cohort for Adolescents In a Romantic Relationship

Target	Mother		Father		Friend		Romantic Partner	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Early Adolescents (<i>n</i> = 37)	1.52	.95	.96	.69	1.23	.89	.84	1.01
Late Adolescents (<i>n</i> = 133)	.80	.77	.26	.44	1.67	.85	1.87	1.02

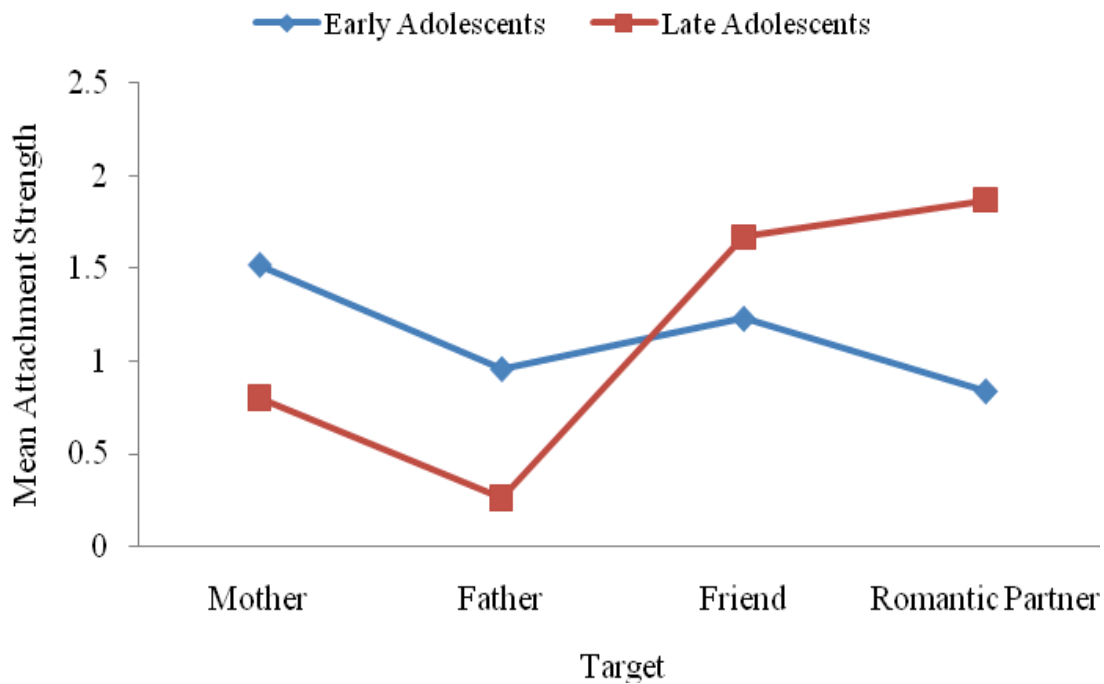


Figure 6.9. Mean Attachment Strength for Target According to Cohort for Adolescents In a Romantic Relationship

Target by Function

The significant Target by Function interaction, $F(6.59, 1094.30) = 16.97, p < .001$, partial $\eta^2 = .093$, also revealed that romantically-involved adolescents' preferences for specific attachment targets varied according to the attachment function fulfilled (see Figure 6.10). Means and standard deviations are presented in Table 6.13. Using a Bonferroni adjustment of $p = .002$ (i.e., $.05/24$), post-hoc paired samples t-tests revealed romantic partners were selected most for Proximity-seeking and significantly more than mothers, $t(169) = -10.64, p < .001$, and fathers, $t(169) = -15.03, p < .001$, but similarly to friends, $t(169) = -.85, ns$. Friends were also chosen significantly more relative to mothers, $t(169) = -10.87, p < .001$, and fathers, $t(169) = -16.12, p < .001$, for Proximity-seeking. Mothers, in turn, were used significantly more than fathers, $t(169) = 5.62, p < .001$, for this function. Regarding Safe Haven, romantically-involved adolescents turned

most to friends and significantly more than mothers, $t(169) = -5.80, p < .001$, and fathers, $t(169) = -12.80, p < .001$, but not romantic partners, $t(169) = .97, ns$. Likewise, romantic partners were used significantly more for Safe Haven compared to mothers, $t(169) = -4.53, p < .001$, and fathers, $t(169) = -10.45, p < .001$. Adolescents in romantic relationships reported least attachment strength to fathers for Safe Haven and significantly less relative to mothers, $t(169) = 8.56, p < .001$.

Romantic partners were chosen most for Separation Protest, and significantly more than friends, $t(169) = -4.72, p < .001$, mothers, $t(169) = -5.83, p < .001$, and fathers, $t(169) = -10.13, p < .001$. Similar attachment strength to friends and mothers were reported for Separation Protest, $t(169) = -1.85, ns$, with friends, $t(169) = -6.49, p < .001$, and mothers, $t(169) = 6.09, p < .001$, used significantly more compared with fathers. For Secure Base, adolescents with romantic partners selected friends to the same extent as mothers, $t(169) = -1.62, ns$, and romantic partners, $t(169) = 2.40, ns$. Friends were however chosen significantly more in comparison with fathers for Secure Base, $t(169) = -6.66, p < .001$. Similar attachment strength to mothers and romantic partners was reported for Secure Base, $t(169) = .58, ns$. Fathers were used least for Secure Base and significantly less relative to mothers, $t(169) = 7.93, p < .001$, and romantic partners, $t(169) = -4.53, p < .001$.

It is the ratings for romantic partners relative to friends and mothers at Separation Protest and Secure Base respectively that creates the interactive effect in this two-way interaction. Whilst romantic partners and friends are joint main targets of Proximity-seeking and Safe Haven, both are used to a similar extent as mothers for Secure Base. Romantic partners are, however, clear favorites for Separation Protest and differ significantly from friends and mothers. Mothers and fathers are generally used less than romantic partners and friends for all attachment functions excluding Secure Base, with either a romantic partner or friend chosen as the primary target of attachment. In fact,

friends continue to be important attachment figures for romantically-involved adolescents and are selected as much as romantic partners for Proximity-seeking, Safe Haven, and Secure Base. The importance of the romantic partner as a target of attachment, particularly for fulfillment of Separation Distress, is further highlighted for adolescents in a romantic relationship.

Table 6.13

Means and Standard Deviations of Mean Attachment Strength for Function According to Target for Adolescents In a Romantic Relationship

Target (<i>n</i> = 170)	Proximity- seeking		Safe Haven		Separation Protest		Secure Base	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother	.61	.84	.96	1.06	.96	1.06	1.27	1.16
Father	.25	.58	.32	.67	.47	.79	.61	.87
Friend	1.81	.94	1.76	1.04	1.20	1.04	1.53	1.19
Romantic Partner	1.93	1.20	1.62	1.29	1.84	1.27	1.19	1.20

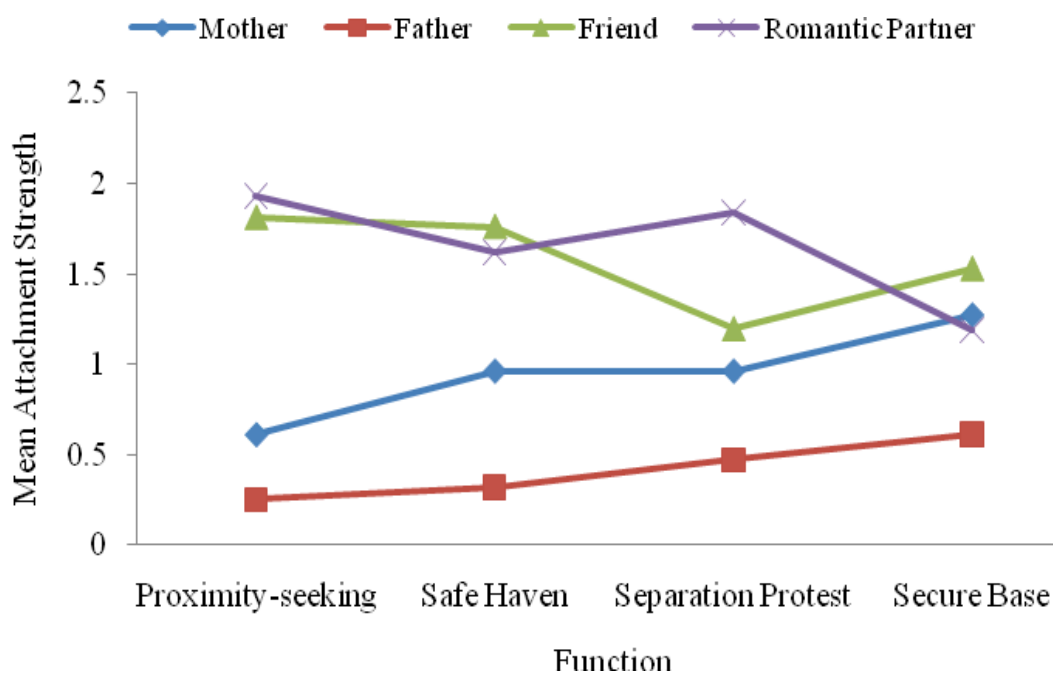


Figure 6.10. Mean Attachment Strength for Function According to Target for Adolescents In a Romantic Relationship.

6.3.5.4 Overall Summary

The results from these analyses demonstrated that early and late adolescents differed in utility of mothers, fathers, friends, and romantic partners as attachment targets according to attachment function, gender and current romantic status. Overall, early adolescents reported higher attachment strength than did late adolescents, and used mothers and fathers significantly more as attachment figures than the latter regardless of romantic status. Late adolescents turned most to their romantic partners or to friends if they were romantically-uninvolved. Adolescents without romantic partners demonstrated a clear preference for friends over mothers as attachment figures, while romantically-involved adolescents chose romantic partners, friends and mothers similarly for attachment needs. Both romantically-involved adolescents and adolescents without romantic relationships exhibited similar patterns in utility of different

attachment targets for attachment needs, with romantic partners (if present) sharing the main role with friends of fulfilling Proximity-seeking and Safe Haven, and used similarly to both mothers and friends for Secure Base. Romantic partners elicited the most Separation Distress among adolescents in romantic relationships whereas both mothers and friends evoked this function similarly among adolescents without romantic relationships.

Although adolescents without romantic partners generally reported higher mean attachment strength than adolescents with romantic partners, both groups evinced similar trends of turning most to friends for Proximity-seeking and Safe Haven, and similarly to mothers and friends for Separation Protest and Secure Base. Adolescents not in romantic relationships also used mothers and fathers more than, and friends comparably to romantically-involved adolescents for all attachment functions except Proximity-seeking. For Proximity-seeking, adolescents without romantic relationships turned to fathers and friends significantly more than did the romantically-involved adolescents, although both reported similar attachment strength to mothers.

Gender differences were demonstrated with adolescent females exhibiting greater reliance on friends overall compared with adolescent males who exclusively used friends only for Proximity-seeking. Adolescent females turned more to friends, and adolescent males to fathers, particularly for Safe Haven and Secure Base. Adolescent males additionally reported higher attachment to fathers relative to adolescent females for Proximity-seeking. Both sexes did not differ in their use of fathers or friends for Separation Protest. Mothers remained an important attachment figure for both genders with adolescent males and females evincing similar attachment strength to her across all four functions. Fathers were however used least as an attachment target by all adolescents for every attachment function regardless of age, gender or romantic status.

6.3.5.5 Attachment Reorganization in Cross-section: Extension

Next, two separate mixed Analysis of Covariances (ANCOVAs) were conducted to examine if the developmental differences in attachment reorganization demonstrated earlier in this study changed once individual differences in global attachment models were accounted for. Similar to the previous analyses, separate mixed ANCOVAs were conducted with the first set of analyses involving all adolescents ($N = 511$) surveyed and the second set of analyses limited to adolescents who reported a romantic partner ($n = 170$) only. Investigation into the process of attachment reorganization having controlled for attachment expectancies represents an extension on previous research in that no studies to date have initially partialled out the influences of existing attachment models prior to examining the developmental model of attachment reorganization amongst adolescents. Conducting ANCOVAs also has the advantage of increasing the sensitivity of the F -tests and likelihood of detecting differences between adolescents (Tabachnick & Fidell, 2001).

Two separate mixed Analysis of Covariances (ANCOVAs) were employed to explore the differences in the utility of attachment figures for specific attachment needs among adolescents as a function of age, gender, and the presence (or absence) of a romantic relationship having adjusted for individual differences in attachment models. The first ANCOVA constituted all adolescents sampled ($N = 511$) and focuses on identifying the extent to which adolescents rely on the three attachment targets of mothers, fathers, and friends for attachment functions depending on their age, gender, and romantic status after accounting for individual differences in attachment models. The second ANCOVA ($n = 170$) is similar in design and centers exclusively on the adolescents in current romantic relationships while additionally exploring their use of romantic partners as a target of attachment. Similar to the ANOVA analyses previously

conducted, these ANCOVAs systematically examine attachment reorganization firstly across all adolescents and subsequently among adolescents with romantic relationships, after controlling for attachment working models. Only findings which differ from the patterns of attachment utility established earlier in the ANOVAs are discussed to avoid redundancy, with references made to the original graphs if these remain similar.

6.3.5.6 Entire Adolescent Sample with Three Targets (Mother, Father, and Friend)

The first ANCOVA ($N = 511$) constituted a five-way mixed ANCOVA design of 4 (Function – Proximity-seeking, Safe Haven, Separation Protest, and Secure Base) x 3 (Target – Mother, Father, and Friend) x 2 (Cohort – Early Adolescents vs. Late Adolescents) x 2 (Sex – Male vs. Female) x 2 (Romantic Status – No Romantic Relationship vs. In a Romantic Relationship) with Anxiety and Avoidance as the two covariates. Preliminary checks conducted using an alpha value of $p < .01$ revealed that the assumptions of normality, linearity, homogeneity of variance, homogeneity of regression, and reliability of covariates were met. Scores for Target and Function both violated the assumptions of independence and thus a strict level of significance ($p < .01$) was applied with Bonferroni adjustments conducted for all post-hoc multiple comparisons.

After adjustment for Anxiety and Avoidance, results of the Function by Target by Cohort by Sex by Romantic Status (4 x 3 x 2 x 2 x 2) ANCOVA revealed significant main effects for Function, Cohort, and Romantic Status. All three main effects were qualified by significant two-way interactions and three-way interactions. Regarding the covariates, there was a significant main effect for Avoidance and also a significant two-way Anxiety by Target interaction. Most of the results established presently parallel those demonstrated in the earlier ANOVA analyses with some exceptions.

Consequently, only results which differ from those of the ANOVAs will be presented to avoid repetition of prior findings with reference made to previous graphs if found similar. Differences in the patterns of attachment utility demonstrated between the present ANCOVA and previous ANOVA analyses are also highlighted where established. A systematic ‘layering’ approach was likewise adopted for the presentation of the current results beginning with (1) main effects, (2) two-way interactions and finally, (3) three-way interactions.

6.3.5.6.1 Main Effects

Significant main effects were derived for Function, $F(2.70, 1354.42) = 11.92, p < .001$, partial $\eta^2 = .023$, Cohort, $F(1, 501) = 39.65, p < .001$, partial $\eta^2 = .073$, and Romantic Status, $F(1, 501) = 31.94, p < .001$, partial $\eta^2 = .060$. The main effect for Target, $F(1.51, 755.41) = 5.26, p = .011$, partial $\eta^2 = .010$, approached but did not achieve statistical significance unlike in the previous ANOVA analyses. Nevertheless, it is associated with several higher-order interactions. Sex did not attain statistical significance either, $F(1, 501) = .002, p = .97$, partial $\eta^2 = .000$, but is again implicated in the higher-order interactions. All significant main effects were documented in the previous section (see 6.3.5.2.1) and will not be repeated here.

There was a significant main effect for the covariate of Avoidance, $F(1, 501) = 13.76, p < .001$, partial $\eta^2 = .027$. The covariate of Anxiety verged on statistical significance, $F(1, 501) = 5.73, p = .017$, partial $\eta^2 = .011$, and is implicated in a significant two-way interaction.

Avoidance

Only Avoidance, $F(1, 501) = 13.76, p < .001$, partial $\eta^2 = .027$, uniquely adjusted mean attachment ratings after covariates were adjusted for other covariates, main effects, and higher-order interactions. There was a modest and inverse relationship between Avoidance and mean attachment strength with the former explaining 2.7% of the variance in the utility of attachment targets. Specifically, a decrease of .01 in mean attachment strength was reported each time Avoidance increased by one score. Adolescents who report higher Avoidance appear to demonstrate lower attachment strength to mothers, fathers, and friends.

6.3.5.6.2 Two-way Interactions

Significant interactions were demonstrated for Target by Function, $F(4.39, 2197.07) = 8.87, p < .001$, partial $\eta^2 = .017$, Target by Cohort, $F(1.51, 755.41) = 30.08, p < .001$, partial $\eta^2 = .057$, Target by Sex, $F(1.51, 755.41) = 11.90, p < .001$, partial $\eta^2 = .023$, and Cohort by Sex, $F(1, 501) = 7.96, p = .005$, partial $\eta^2 = .016$. Only the latter interaction differed in its results from that established in prior ANOVA analyses (see 6.3.5.2.2) and is elaborated here. A significant Anxiety by Target interaction, $F(1.51, 755.41) = 15.86, p < .001$, partial $\eta^2 = .031$, also revealed that adolescents' preferences for specific attachment targets varied depending on the amount of attachment anxiety reported.

Cohort by Sex

A significant Cohort by Sex interaction, $F(1, 501) = 7.96, p = .005$, partial $\eta^2 = .016$, revealed significant age differences in attachment strength between adolescent males and females after adjustment for Anxiety and Avoidance. Adjusted means and standard deviations are presented in Table 6.14. Post-hoc independent samples t-tests using a

Bonferroni correction of $p = .013$ (i.e., $.05/4$) revealed that early adolescent males reported significantly higher attachment than late adolescent males, $t(129.35) = 18.60, p < .001$. Early adolescent females also relied significantly more on attachment figures compared with late adolescent females, $t(265.39) = 16.51, p < .001$. Whilst attachment ratings were similar between early adolescent males and females, $t(174.80) = 1.45, ns$, late adolescent females demonstrated significantly higher attachment strength relative to late adolescent males, $t(326) = 4.70, p < .001$. The latter result contrasts to the earlier finding of no significant difference in attachment strength between late adolescent males and females.

There now appears to be a trend of increasing disparity in attachment ratings between adolescent males and females as a function of age after accounting for attachment anxiety and avoidance, with late adolescent females reporting greater utility of attachment figures than late adolescent males. However, caution is warranted in interpreting the significance of this ordinal interaction as it may also be an artifact of measurement despite its statistical significance in the post-hoc analyses (Mitchell & Jolley, 2001). Further research is warranted to determine if the significant age differences in the utility of attachment figures according to sex are genuine.

Table 6.14

Adjusted Means and Standard Deviations of Mean Attachment Strength for Sex According to Cohort

Sex	Early Adolescents			Late Adolescents		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Male	74	1.32	.07	90	.99	.15
Female	109	1.34	.12	238	1.08	.16

Anxiety by Target

The significant Anxiety by Target interaction, $F(1.51, 755.41) = 15.86, p < .001$, partial $\eta^2 = .031$, revealed that adolescents' preferences for attachment targets differed according to the level of attachment anxiety reported. A post-hoc mixed models analysis using a Bonferroni correction of $p = .017$ (i.e., $.05/3$) found that the use of friends for attachment functions differed significantly from those of mothers, $t(6119) = -8.63, p < .001$, and fathers, $t(6119) = -6.84, p < .001$ (see Figure 6.11). For every unit increase in Anxiety reported, mean attachment strength to mothers and fathers decreased by .04 and .03 respectively compared with friends. The regression slopes for mothers and fathers were not significantly different, $t(6119) = 1.79, ns$.

The interaction occurs whereby adolescents report using friends more and mothers less for attachment functions as levels of attachment anxiety increase. Parental attachment strength was inversely related to Anxiety, with the use of mothers for attachment functions evincing a steeper decline than that of fathers. By contrast, adolescents more readily selected friends for attachment needs as their levels of anxiety rose. These results suggest that adolescents turn more to friends and less to parents, especially mothers, for attachment needs with growing attachment anxiety.

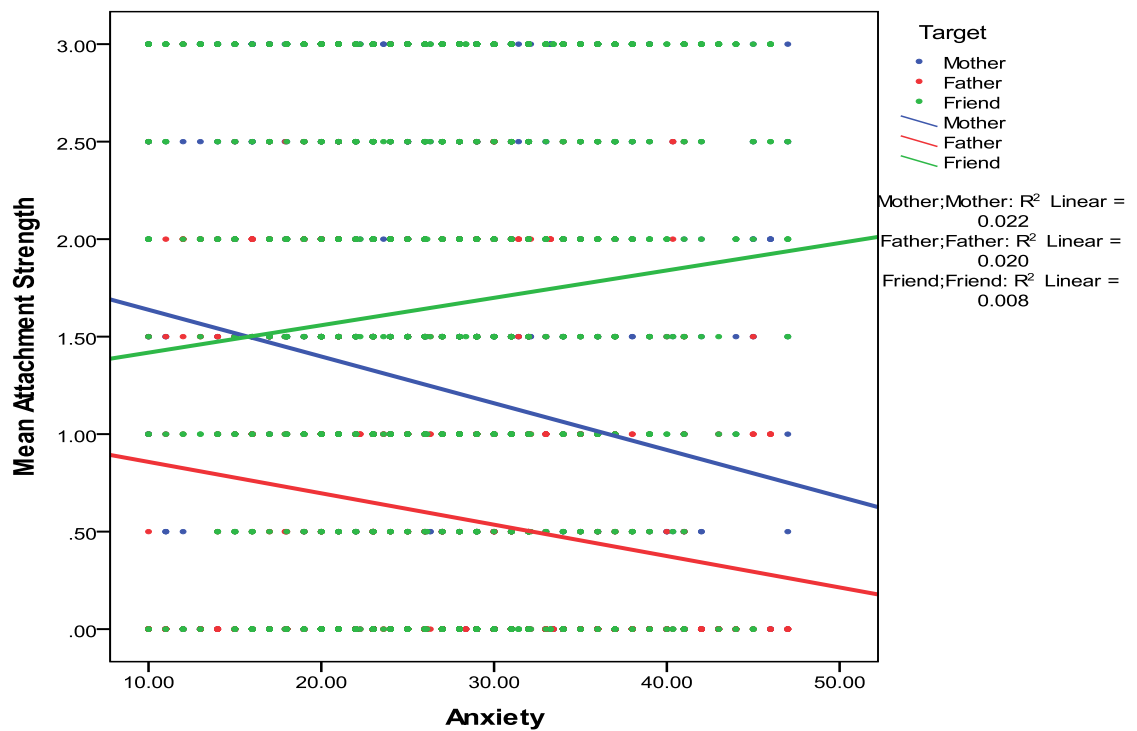


Figure 6.11. Relationship between Anxiety and Mean Attachment Strength with Mothers, Fathers, and Friends as Attachment Targets.

6.3.5.6.3 Three-way Interactions

Accounting for existing attachment models, further differences in utility of attachment targets for specific attachment functions were demonstrated according to Sex only. In contrast to the previous ANOVA analyses (see 6.3.5.2.3), the Target by Function by Romantic Status interaction, $F(4.39, 2197.07) = 3.01, p = .014$, partial $\eta^2 = .006$, approached but failed to obtain statistical significance. The Target by Function by Sex interaction, $F(4.39, 2197.07) = 5.42, p < .001$, partial $\eta^2 = .011$, is examined at the level of the simple interaction and then compared across the pair of simple interactions to assist understanding of the results.

Target by Function by Sex

Adolescents demonstrated distinct gender preferences for specific attachment targets to satisfy different attachment functions as revealed by the significant Target by Function by Sex interaction, $F(4.39, 2197.07) = 5.42, p < .001$, partial $\eta^2 = .011$. Two-way within subjects ANOVAs (Target (3) x Function (4)) conducted at each level of Sex (Male and Female) revealed significant simple interactions for both males, $F(2.27, 369.62) = 1012.84, p < .001$, partial $\eta^2 = .86$, and females, $F(2.18, 754.69) = 2947.78, p < .001$, partial $\eta^2 = .895$. Post-hoc multiple comparisons t-tests using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) were conducted for adolescent males and females separately. Adjusted means and standard deviations for adolescent males and females are presented in Table 6.15, with reference made to Figures 6.7a and 6.7b respectively as means remained the same after adjustment for attachment models.

Table 6.15

Adjusted Means and Standard Deviations of Mean Attachment Strength for Function According to Target and Sex

Target (<i>N</i> = 511)	Proximity-		Safe Haven		Separation		Secure Base		
	seeking				Protest				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Males (<i>n</i> = 164)									
Mother	.74	.39	1.45	.61	1.23	.46	1.62	.51	
Father	.55	.29	.77	.40	.77	.35	1.07	.37	
Friend	1.92	.38	1.34	.44	1.07	.30	1.16	.31	
Female (<i>n</i> = 347)									
Mother	.79	.29	1.24	.51	1.32	.43	1.53	.45	
Father	.31	.21	.34	.29	.64	.37	.66	.29	
Friend	2.14	.26	2.04	.34	1.34	.32	1.63	.22	

As illustrated in Figure 6.7a, post-hoc comparisons revealed that adolescent males selected friends most for Proximity-seeking and significantly more than mothers, $t(163) = -22.00, p < .001$, and fathers, $t(163) = -31.94, p < .001$. Contrary to previous findings, mothers were used significantly more compared with fathers for Proximity-seeking, $t(163) = 17.37, p < .001$, after accounting for global attachment models. The findings for Safe Haven were consistent with earlier results whereby both mothers, $t(163) = 32.96, p < .001$, and friends, $t(163) = -9.05, p < .001$, were chosen significantly more than fathers for Safe Haven but were used similarly for this function by adolescent males, $t(163) = 1.37, ns$. As for Separation Protest, the only consistent finding was that adolescent males provided the highest attachment ratings to mothers, and reported

significantly greater attachment to mothers relative to fathers for this function, $t(163) = 37.84, p < .001$. Mothers were instead selected significantly more for Separation Protest relative to friends, $t(163) = 3.10, p = .002$, with friends chosen significantly more than fathers, $t(163) = -6.71, p < .001$. Adolescent males similarly elected mothers most for Secure Base and in contrast to earlier findings, used mothers significantly more than friends for this function, $t(163) = 7.39, p < .001$. Mirroring previous results, fathers were chosen least for Secure Base, and utilized significantly less than mothers, $t(163) = 22.20, p < .001$, but not friends, $t(163) = -1.85, ns$.

Post-hoc comparisons revealed that like adolescent males, adolescent females showed a preference for friends for Proximity-seeking and selected them significantly more than mothers, $t(346) = -57.71, p < .001$, and fathers, $t(346) = -90.47, p < .001$ (see Figure 6.7b). Mothers were relied upon significantly more relative to fathers for Proximity-seeking, $t(346) = 109.19, p < .001$. Friends received the highest attachment ratings for Safe Haven, with adolescent females choosing them significantly more than mothers, $t(346) = -19.62, p < .001$, and fathers, $t(346) = -54.60, p < .001$. Adolescent females also reported significantly greater attachment to mothers compared with fathers for Safe Haven, $t(346) = 75.09, p < .001$. Concerning Separation Protest, adolescent females used friends similarly to mothers, $t(346) = -.65, ns$, with both friends, $t(346) = -20.03, p < .001$, and mothers, $t(346) = 70.21, p < .001$, selected significantly more than fathers. Friends again were chosen most for Secure Base but contrary to previous findings, were now elected significantly more for this function compared to mothers, $t(346) = -3.03, p = .003$, after adjustment for Anxiety and Avoidance. Fathers were least used for Secure Base with adolescent females selecting fathers significantly less than friends, $t(346) = -37.23, p < .001$, and mothers, $t(346) = 79.63, p < .001$.

Post-hoc independent samples t-tests conducted between the sexes using a Bonferroni adjustment of $p = .004$ (i.e., $.05/12$) revealed that for Proximity-seeking,

attachment strength to mothers was similar between the sexes, $t(250.96) = 1.48$, *ns*, while adolescent males reported significantly higher attachment to fathers compared with adolescent females, $t(250.11) = -9.38$, $p < .001$. Adolescent females evinced significantly higher attachment to friends for Proximity-seeking than did adolescent males after controlling for attachment expectancies, $t(237.65) = 6.55$, $p < .001$, whereas similar attachment strength to friends was previously reported. Contradicting earlier results, adolescents males relied significantly more on mothers for Safe Haven relative to adolescent females, $t(272.99) = -3.86$, $p < .001$. Adolescent males also selected fathers significantly more for Safe Haven than adolescent females, $t(247.53) = -12.23$, $p < .001$, whereas females chose friends significantly more for this same function relative to males, $t(260.32) = 18.23$, $p < .001$, in line with previous findings. For Separation Protest, only the finding that adolescent males and females did not significantly differ in attachment strength to mothers, $t(300.94) = 1.90$, *ns*, mirrored earlier results. Rather, adolescent males were found to select fathers significantly more for Separation Protest in comparison to adolescent females, $t(509) = -4.06$, $p < .001$, whereas females chose friends significantly more for this function than did males, $t(509) = 9.09$, $p < .001$. Present results for Secure Base were, however, completely consistent with earlier findings. Attachment ratings of mothers for Secure Base did not significantly differ between the genders, $t(285.05) = -1.86$, *ns*. Adolescent males reported significantly greater attachment to fathers for Secure Base compared to adolescent females, $t(261.71) = -12.43$, $p < .001$, whilst females used friends significantly more for this function than did males, $t(242.92) = 17.39$, $p < .001$.

The patterns of utility of different attachment targets for specific attachment needs generally parallel those demonstrated previously with gender differences found now more distinct after adjustment for global attachment models. Similar to the previous ANOVA analyses, gender differences in the relative positioning of friends as an

attachment target especially for Safe Haven and Secure Base are primarily responsible for the interactive effect demonstrated in this three-way interaction. Whereas friends are clearly preferred for Proximity-seeking by adolescent males and females, only the latter continue to rely foremost on friends for Safe Haven. Adolescent males used mothers and friends similarly for Safe Haven. Mothers are selected most for Separation Protest by adolescent males whilst adolescent females choose friends and mothers equally for this function. For Secure Base, adolescent females and males differentially orient towards friends and mothers respectively as their primary attachment figure. Fathers were used least among the three attachment targets by all adolescents, and selected less by females than males for all attachment functions.

Overall, adolescent females demonstrated greater reliance on friends for attachment functions compared with adolescent males. Adolescent females preferred friends most for all attachment functions except Separation Protest wherein friends and mothers were used equally. By contrast, adolescent males used friends mostly for Proximity-seeking and similarly to mothers for Safe Haven, while selecting mothers most for Separation Protest and Secure Base. Attachment strength to mothers was however similar between the sexes for all attachment needs except Safe Haven. After controlling for attachment models, adolescent females were found to significantly prefer friends and adolescent males their fathers for all four attachment functions.

6.3.5.7 Adolescents In a Romantic Relationship Subsample with Four Targets (Mother, Father, Friend, Romantic Partner)

A second ANCOVA ($n = 170$) was conducted to examine if the developmental differences in attachment reorganization demonstrated among adolescents with a romantic partner remained the same after accounting for existing attachment models.

This second ANCOVA comprised a four-way mixed ANCOVA design of 4 (Function – Proximity-seeking, Safe Haven, Separation Protest, and Secure Base) x 4 (Target – Mother, Father, Friend, and Romantic Partner) x 2 (Cohort – Early Adolescents vs. Late Adolescents) x 2 (Sex – Male vs. Female), with Anxiety and Avoidance as the two covariates. Results of evaluation of the assumptions of normality, linearity, homogeneity of variance, homogeneity of regression, and reliability of covariates using an alpha value of $p < .01$ were satisfactory. As scores for both Target and Function violated the assumptions of independence, a strict level of significance ($p < .01$) was applied and Bonferroni corrections made for all post-hoc multiple comparisons.

After controlling for global attachment models, results of the Function by Target by Cohort by Sex (4 x 4 x 2 x 2) ANCOVA revealed no significant main effects but three significant two-way interactions. Unlike the previous ANOVA analyses (see 6.3.5.3.1), the main effect of Target, $F(2.37, 388.57) = 1.57, p = .21$, partial $\eta^2 = .009$, was not statistically significant once Anxiety and Avoidance were accounted for. There were no significant main effects for either covariate of Anxiety, $F(1, 164) = .00, p = .995$, partial $\eta^2 = .000$, or Avoidance, $F(1, 164) = 4.29, p = .04$, partial $\eta^2 = .025$, although a significant Anxiety by Target two-way interaction was demonstrated. Several differences between the present ANCOVA analyses and the previous ANOVA analyses were revealed in the two-way interactions (see 6.3.5.3.2) and are elaborated on below. Once again, the inconsistencies present in the results between the current and original analyses are highlighted, and references made to previous graphs where appropriate.

6.3.5.7.1 Two-way Interactions

Target by Cohort

The significant Target by Cohort interaction, $F(2.37, 388.57) = 17.33, p < .001$, partial $\eta^2 = .096$, revealed that early and late romantically-involved adolescents

significantly differed in their preferences for attachment targets. Adjusted means and standard deviations are presented in Table 6.16. All post-hoc multiple comparisons were conducted using a Bonferroni adjustment of $p = .003$ (i.e., $.05/16$). Akin to previous findings, post-hoc independent samples t-tests revealed that early adolescents used mothers, $t(43.04) = 13.53, p < .001$, and fathers, $t(38.27) = 13.68, p < .001$, as attachment targets significantly more than late adolescents, whereas late adolescents relied on romantic partners significantly more for attachment needs relative to early adolescents, $t(50.02) = -11.19, p < .001$. However, late adolescents reported using friends significantly more than early adolescents, $t(168) = -20.07, p < .001$, contrasting with earlier results.

Post-hoc paired samples t-tests revealed that early adolescent selected mothers most and used her significantly more than friends, $t(36) = 3.35, p = .002$, fathers, $t(36) = 38.67, p < .001$, and romantic partners, $t(36) = 7.16, p < .001$, to fulfill attachment functions. Romantically-involved early adolescents also chose friends significantly more than romantic partners for attachment needs, $t(36) = 21.23, p < .001$. These findings are contrary to those which found mothers as only being significantly favored over fathers for attachment functions with similar attachment strength reported to both friends and romantic partners. However, early adolescents chose their fathers as much as friends, $t(36) = -3.12, ns$, and romantic partners, $t(36) = 1.26, ns$, for attachment needs as established earlier.

As for late adolescents with romantic partners, the only inconsistent finding was that attachment strength to romantic partners was now significantly higher than to friends, $t(132) = -5.79, p < .001$, whereas attachment ratings between both targets were equivalent previously. Romantic partners were selected most as an attachment target and significantly more than mothers, $t(132) = -30.92, p < .001$, and fathers, $t(132) = -53.79, p < .001$. Friends were likewise significantly preferred to mothers, $t(132) = -$

35.10, $p < .001$, and fathers, $t(132) = -69.65$, $p < .001$, with mothers relied upon significantly more relative to fathers as an attachment target, $t(132) = 72.58$, $p < .001$. Given that the same means were found after adjusting for attachment anxiety and avoidance, this two-way interaction is as depicted in Figure 6.9.

The interaction occurs wherein the trend of early adolescents demonstrating higher attachment to mothers and fathers contrasts with the trend of higher attachment to friends and romantic partners reported by late adolescents. Late adolescents preferred peers to fulfill attachment needs whereas early adolescents oriented towards parents as attachment targets. Specifically, early adolescents preferred mothers over all other attachment targets with fathers used to a similar extent as both friends and romantic partners. Early adolescents also selected friends more than romantic partners to satisfy attachment needs. By contrast, romantic partners were the distinct choice of late adolescents who used them most among all attachment targets with friends as their second preference, and fathers as least preferred.

Table 6.16

Adjusted Means and Standard Deviations of Mean Attachment Strength for Target According to Cohort for Adolescents In a Romantic Relationship

Target	Romantic							
	Mother		Father		Friend		Partner	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Early Adolescents ($n = 37$)	1.52	.31	.96	.31	1.23	.22	.84	.27
Late Adolescents ($n = 133$)	.80	.18	.26	.10	1.67	.18	1.87	.27

Target by Function

Romantically-involved adolescents' preferences for specific attachment targets also differed according to the specific attachment functions fulfilled as indicated by the significant Target by Function interaction, $F(6.63, 1087.86) = 6.03, p < .001$, partial $\eta^2 = .035$. Adjusted means and standard deviations are presented in Table 6.17. Post-hoc paired samples t-tests using a Bonferroni adjustment of $p = .002$ (i.e., $.05/24$) revealed that while romantic partners were selected most for Proximity-seeking and significantly more compared to mothers, $t(169) = -21.61, p < .001$, and fathers, $t(169) = -28.59, p < .001$, they were used to a similar extent as friends, $t(169) = -3.01, ns$. Friends were relied upon significantly more for Proximity-seeking than either mothers, $t(169) = -41.28, p < .001$, or fathers, $t(169) = -52.33, p < .001$, with mothers also chosen significantly more compared with fathers, $t(169) = 48.24, p < .001$. Friends were chosen most for Safe Haven and used significantly more relative to romantic partners, $t(169) = 3.77, p < .001$, mothers, $t(169) = -13.24, p < .001$, and fathers, $t(169) = -24.34, p < .001$. This contradicts the earlier finding whereby friends and romantic partners were equivalently selected for this function. Adolescents in romantic relationships also turned to romantic partners significantly more for Safe Haven in comparison to mothers, $t(169) = -8.76, p < .001$, and fathers, $t(169) = -18.17, p < .001$. Fathers were chosen least for Safe Haven, and significantly less than mothers, $t(169) = 62.27, p < .001$.

Regarding Separation Protest, adolescents utilized their romantic partners most and significantly more than friends, $t(169) = -16.37, p < .001$, mothers, $t(169) = -13.12, p < .001$, and fathers, $t(169) = -21.17, p < .001$. Contrary to earlier results, friends were used significantly more for Separation Protest as compared to mothers, $t(169) = -5.67, p < .001$. Romantically-involved adolescents reported least attachment to fathers for Separation Protest and significantly less relative to friends, $t(169) = -18.44, p < .001$, and mothers, $t(169) = 55.80, p < .001$. For Secure Base, friends were not only selected

most but unlike previous analyses, were relied on to a significantly greater extent than mothers, $t(169) = -4.44, p < .001$, and romantic partners, $t(169) = 12.84, p < .001$.

Friends were also utilized for Secure Base significantly more relative to fathers, $t(169) = -17.62, p < .001$. Paralleling earlier results, adolescents reported similar attachment strength between mothers and romantic partners for Secure Base, $t(169) = 1.34, ns$, and significantly preferred both mothers, $t(169) = 38.78, p < .001$, and romantic partners, $t(169) = -9.61, p < .001$, to fathers. As means remained unchanged after controlling for attachment expectancies, this two-way interaction is as illustrated in Figure 6.10.

It is the relative ratings of friends and romantic partners for Safe Haven, Separation Protest and Secure Base which creates the interaction in this two-way interaction. While functioning as joint main targets for Proximity-seeking, friends and romantic partners are the primary attachment target of Safe Haven and Separation Protest respectively. Friends are now most preferred for Secure Base, with mothers and romantic partners used as secondary targets. Mothers and fathers were generally selected less than friends and romantic partners for all attachment functions. For romantically-involved adolescents, either a friend or a romantic partner is chosen as the primary attachment target for each of the four attachment functions. Specifically, friends continue to be important attachment targets for romantically-involved adolescents and are chosen most for Safe Haven and Secure Base, whilst being used to a similar extent as romantic partners for Proximity-seeking. In turn, romantic partners feature as the distinct targets of Separation Protest and are selected as much or secondary to friends for the other attachment functions.

Table 6.17

Adjusted Means and Standard Deviations of Mean Attachment Strength for Function According to Target

Target (<i>n</i> = 170)	Proximity- seeking				Separation			
	Safe Haven		Protest		Secure Base			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother	.61	.27	.96	.44	.96	.37	1.27	.46
Father	.25	.26	.32	.41	.47	.34	.61	.38
Friend	1.81	.18	1.76	.38	1.20	.24	1.53	.31
Romantic Partner	1.93	.53	1.62	.58	1.84	.53	1.19	.43

Anxiety by Target

The significant Anxiety by Target interaction, $F(2.37, 388.57) = 4.59, p = .007$, partial $\eta^2 = .027$, revealed significant differences in who romantically-involved adolescents turned to for attachment functions depending on the amount of attachment anxiety reported. As illustrated in Figure 6.12, a post-hoc mixed model analysis conducted using a Bonferroni adjustment of $p = .008$ (i.e., $.05/6$) revealed that the regression slope demonstrated for romantic partners significantly differed from those of mothers, $t(2706) = -5.25, p < .001$, and fathers, $t(2706) = -4.04, p < .001$, but not friends, $t(2706) = -2.06, ns$. Relative to romantic partners, attachment strength to mothers and fathers decreased by .04 and .03 respectively for every additional score reported for Anxiety, whereas attachment strength to friends decreased only by a non-significant .02. In turn, adolescents in romantic relationships used friends significantly more than mothers for attachment needs, $t(2706) = -3.19, p = .001$, with attachment to mothers declining by .03 relative to that of friends as attachment anxiety increased.

Fathers were the least used among the four attachment targets but reported similar regression slopes of utility as friends, $t(2706) = 1.98$, *ns*, and mothers, $t(2706) = -1.21$, *ns*. For every additional score in Anxiety reported, mean attachment strength to friends increased by .02 compared to that of fathers, whereas attachment to mothers declined by .01.

It is the upward trend in utility of romantic partners by romantically-involved adolescents contrasting with the modest upward trend exhibited for friends, and decline in use of mothers as attachment anxiety increases which creates the interactive effect in this two-way interaction. Whereas friends were selected most and more than mothers and romantic partners as attachment targets at low levels of Anxiety, romantic partners were chosen most and more than friends and mothers at high levels of Anxiety. In fact, adolescents with romantic relationships demonstrated a significant decline in the utility of mothers as attachment targets with increasing attachment anxiety. Fathers were used least as a target of attachment, with romantically-involved adolescents similarly demonstrating a decline in attachment strength reported, though not as marked as that for mothers. Overall, romantically-involved adolescents higher in attachment anxiety preferred peers over parents for attachment functions, with the greatest increase in use demonstrated for romantic partners and the sharpest decline being that for mothers.

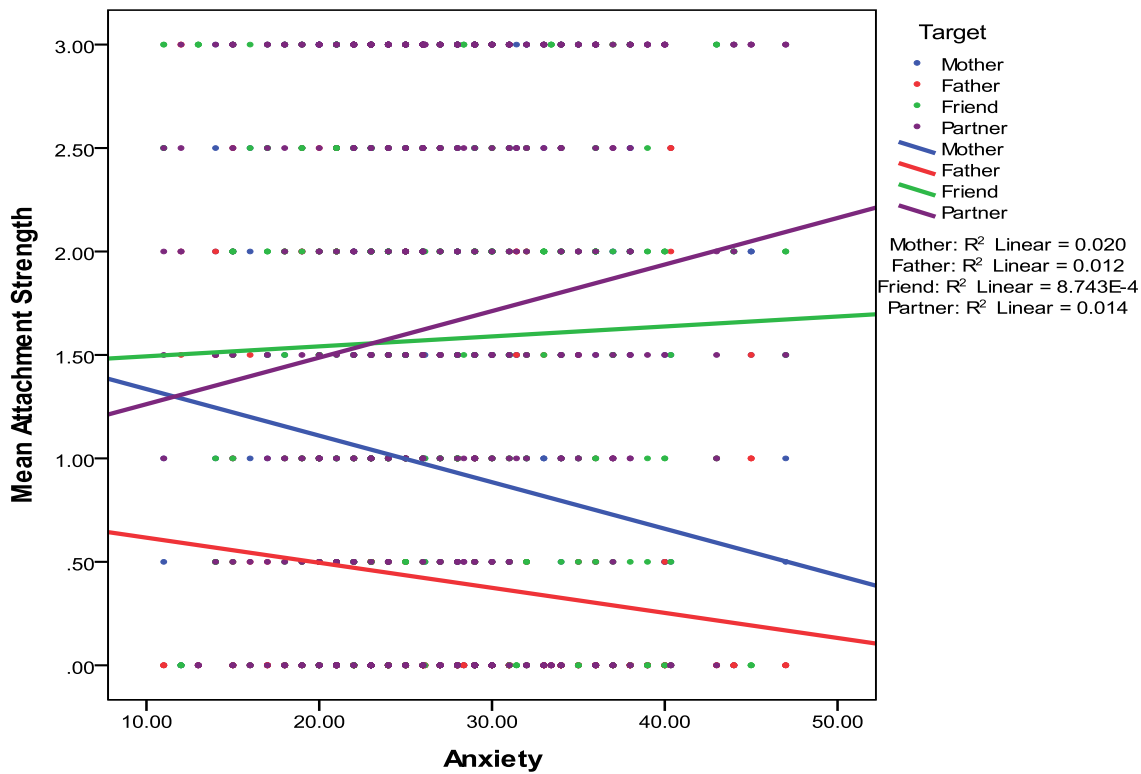


Figure 6.12. Relationship between Anxiety and Mean Attachment Strength for Mothers, Fathers, Friends, and Romantic Partners as Attachment Targets for Adolescents In a Romantic Relationship.

6.3.5.8 Overall Summary

The results from these two mixed-ANCOVAs paralleled those of the previous section with several exceptions relating mainly to the higher-order interactions. Avoidance modestly predicted attachment strength to mothers, fathers, and friends only, with higher levels of Avoidance among all adolescents corresponding to lower reliance on these attachment targets. Although no differences in attachment strength to mothers, fathers, friends, and romantic partners were initially reported after adjustment for attachment models, all adolescents oriented towards peers and away from parents, especially mothers, as attachment anxiety increased. Romantically-involved adolescents relied mostly on romantic partners and those not in romantic relationships on friends as

their levels of Anxiety increased. Early adolescents used parents, particularly mothers, more for attachment functions whereas late adolescents oriented towards peers, especially romantic partners (if present), to fulfill attachment needs. A trend of higher attachment reported by late adolescent females than males that was not present between the sexes among early adolescents was also evinced. Among romantically-involved adolescents, peers were distinctively preferred for Proximity-seeking, with friends used most for Safe Haven and Secure Base and romantic partners uniquely relied on for Separation Protest.

Gender differences were demonstrated with adolescent females relying mostly on friends and adolescent males turning more to mothers in fulfillment of attachment needs. Mothers and friends were selected similarly for Safe Haven and Separation Protest by adolescent males and females respectively. However, both sexes clearly preferred friends for Proximity-seeking and rated mothers similarly for all attachment functions except Safe Haven. Adolescent males and females also turned more to fathers and friends respectively for each of the four attachment needs. Irrespective of attachment functions, age, gender or current romantic status, fathers constituted the least used attachment figure for all adolescents.

6.4 Discussion

6.4.1 Overview

The initial aim of the current dissertation was to demonstrate the developmental model of attachment reorganization in a sample of early and late adolescents from Australia, and to additionally validate the reliability of previous findings (e.g., Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). To current knowledge, this

study represents the first attempt to replicate previous research on attachment reorganization among adolescents in Australia, and has found similar results with some exceptions. In general, attachment reorganization was demonstrated at a cross-sectional level with the pattern of usage of attachment targets for attachment needs consistent with previous findings. Developmental differences in the use of mothers, fathers, friends, and romantic partners were demonstrated, with the extent of utility varying according to age, gender, current romantic status, and individual differences in attachment working models. These results will be discussed in light of the predictions made in accordance with the existing attachment reorganization literature, and with particular reference to the study conducted by Markiewicz and her colleagues (2006). Limitations and directions for future research are also discussed.

6.4.1.1 Attachment Reorganization

Attachment reorganization was demonstrated to occur over adolescence, with the present findings providing support for the first hypothesis. Early adolescents were found to orient towards mothers and fathers for attachment needs, regardless of romantic status. Late adolescents demonstrated a preference for peers to fulfill attachment functions, with late adolescents without romantic relationships turning most to friends, and romantically-involved late adolescents relying mostly on romantic partners. These findings accord with research arguing that attachment reorganization is a normative process throughout adolescence, with individuals increasingly directing attachment behaviors towards peers (Doherty & Feeney, 2004; Hazan & Zeifman, 1994; Trinke & Bartholomew, 1997).

Further support for the process of attachment reorganization is indicated by early and late adolescents' choices of preferred attachment figure. Mothers were the preferred

attachment figure of early adolescents without romantic relationships, whilst those who were romantically-involved continued to use mothers as much as friends and romantic partners for attachment functions. Conversely, late adolescents had oriented more fully towards their peers, and nominated friends and romantic partners (if present) as preferred attachment figures.

These findings show that irrespective of romantic status, mothers are an important attachment figure for early adolescents, with peers preferred by late adolescents. They also parallel previous research demonstrating that while early adolescents continue to utilize mothers for attachment needs and report a high quality of affect towards her, peers (i.e., friends and romantic partners) become increasingly important sources of support and intimacy between early and late adolescence (Buhrmester, 1996; Paterson et al., 1994). Collectively, these findings demonstrate that attachment reorganization is a normative process that takes place over adolescence, where mothers predominantly serve as the primary attachment figure of early adolescents (Freeman & Brown, 2001; Markiewicz et al., 2006) and peers begin to serve many of the same attachment functions as parents from middle to late adolescence (Buhrmester, 1992; Hazan & Zeifman, 1999).

6.4.1.2 Attachment Functions

The second hypothesis that attachment functions would be shifted from parents to peers in a sequential fashion was also supported. In general, all adolescents were found to prefer friends and romantic partners (if present) as attachment targets for both Proximity-seeking and Safe Haven, and sought Secure Base equally from mothers, friends, and romantic partners (if present). Adolescents without romantic partners reported mothers and friends as joint targets for Separation Protest, whilst romantically-

involved adolescents chose romantic partners uniquely for this function. These findings accord with previous literature demonstrating Proximity-seeking as the first function to be shifted from parents to peers by early adolescence, followed by Safe Haven in middle adolescence, with parents still used for Separation Protest and Secure Base even in late adolescence (Hazan & Zeifman, 1994; Friedlmeier & Granqvist, 2006; Nickerson & Nagle, 2005).

Of particular significance, it was found that adolescent males did not conform to this trend when the chronological movement of attachment functions was further explored according to gender. Adolescent males appeared to demonstrate a developmental lag in the sequential shifting of attachment needs from parents to peers, with adolescent males using friends distinctively only for Proximity-seeking, and relying equally on mothers and friends for the remaining attachment functions. Adolescent males and females reported similar attachment strength to mothers for all functions, and thus the potential developmental lag evinced by adolescent males may be more appropriately attributed to their lesser reliance on friends rather than a greater reliance on mothers.

Previous research has indicated that adolescent males and females do not differ in reported levels of support from mothers (Colarossi & Eccles, 2003), and that females demonstrated higher attachment to peers than did males despite reporting a similar number of peer relationships (Claes, 1992). The higher attachment demonstrated by adolescent females is reflected in the characteristics of their friendships, with adolescent females found to self-disclose more, have more exclusive and intimate friendships, and to experience greater increases in both expressed and experienced intimacy in their friendships between early and late adolescence (Cairns, Leung, Buchanan, & Cairns, 1995; Camarena, Sarigiani, & Peterson, 1990; Shulman, Lauren, Kalman, & Karpovsky, 1997). Adolescent females also reported higher levels of emotional closeness, intimacy, and commitment in their friendships relative to adolescent males (Berndt, 1982; Clark-

Lempers, Lempers, & Ho, 1991; Furman & Buhrmester, 1992). This apparent delay in attachment reorganization demonstrated by adolescent males could also be attributed to the later onset of puberty generally experienced by males relative to females (Paikoff & Brooks-Gunn, 1991).

The possible developmental lag evinced by adolescent males could therefore provide support for the chronological movement of attachment functions from parents to peers, by reinforcing that Proximity-seeking is the first function to be shifted to peers, and as demonstrated by adolescent females, that Safe Haven is the second function to be moved to peers, with mothers and peers (i.e., friends and romantic partners) relied upon for fulfillment of Separation Protest and Secure Base.

6.4.1.3 Attachment Figures

Only partial support was established for the third prediction that adolescents would turn to specific attachment figures for different attachment functions. Although Markiewicz and her colleagues (2006) established in their research that each attachment figure was most preferred for a specific attachment function, the present study found that mothers were used similarly to friends for Separation Protest and Secure Base by adolescents with no romantic relationships, and were chosen as much as friends and romantic partners by romantically-involved adolescents for the latter function. Friends and romantic partners were selected most for Proximity-seeking and Safe Haven by all adolescents, except adolescent males without a romantic relationship. Specifically, friends were chosen most for Safe Haven by all adolescents, but were used similarly to mothers and romantic partners by romantically-uninvolved adolescent males and adolescents with romantic relationships respectively. In turn, romantic partners were not chosen most for Proximity-seeking by adolescents in a romantic relationship, but shared

this role with friends. Rather, romantic partners were nominated as the most preferred attachment target for Separation Protest. In fact, the only finding completely consistent with the predictions made was that fathers were least used for all attachment functions, regardless of age, gender, or romantic status.

Mothers

Whereas Markiewicz and her colleagues (2006) demonstrated that mothers were selected most for Secure Base regardless of age, gender, or romantic status, this study found that mothers were joint targets with friends for both Separation Protest and Secure Base for romantically-uninvolved adolescents irrespective of age and gender only. For adolescents in romantic relationships, romantic partners, and not mothers, were the target of Separation Protest with romantic partners and friends chosen as much as mothers for Secure Base. A plausible reason for the discrepancies in findings could relate to the differences in analyses conducted between the current study and that of Markiewicz et al.'s (2006). The two studies differ in that Markiewicz and her colleagues (2006) employed only one set of statistical analyses that combined the ratings of both romantically-involved adolescents and those without romantic relationships. Doing so could have diluted the strength of attachment reported to romantic partners in their study, and would also account for the significant finding in this study regarding the importance of romantic partners for Secure Base. The present research also coalesced friends and best friends into one category of attachment target and chose the higher rating between the two nominations. This difference in methodology may have inflated the strength of attachment reported to this group of peers relative to Markiewicz et al.'s study (2006) that identified attachment strength reported solely to best friends with the majority of participants electing only one figure for this function.

Furthermore, this study recruited more late adolescents ($n = 328$) relative to early adolescents ($n = 183$), which could have skewed findings towards reflecting the advanced developmental stage of late adolescents instead. Adolescents' friendships become more exclusive and intimate with increasing age (Berndt, 1982; Clark-Lempers et al., 1991; Furman & Buhrmester, 1992; Shulman et al., 1997), and thus late adolescents are likely to have more established friendships of higher quality compared to early adolescents (Fraley & Davis, 1997). Late adolescents would also be moving attachment needs from parents to peers as part of establishing autonomy, even in the absence of romantic relationships (Friedlmeier & Granqvist, 2006). That said, these findings demonstrate unequivocally that mothers continue to be important sources of felt security for all adolescents regardless of age, gender or romantic status, even if this role is now shared with friends and romantic partners.

Friends and Romantic Partners

Overall, peers (i.e., friends and romantic partners) were chosen most for Proximity-seeking and Safe Haven regardless of age or romantic status, as would be predicted by the developmental model of attachment reorganization (Hazan & Shaver, 1994; Hazan & Zeifman, 1994). Adolescent males without a romantic relationship additionally used mothers for Safe Haven. Theorists have postulated that the onset of puberty initiates a fundamental reorganization of the adolescent's relationships with parents and peers as the emergence of the sexual behavioral system alters the interplay between the affiliative and attachment systems (Ainsworth, 1989; Kobak et al., 2007). The affiliative and sexual behavioral systems work in synchrony to increase proximity and emotional involvement with peers as adolescents strive to individuate and decrease their reliance on parents (Allen, 2008; Allen & Land, 1999; Kobak et al., 2007). These findings also parallel previous research demonstrating a movement of Proximity-seeking and Safe

Haven from parents to peers by early adolescence (Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006; Hazan & Zeifman, 1994; Markiewicz et al., 2006).

Friends

The hypothesis that friends would be chosen most by all adolescents for Safe Haven was mainly supported, with two exceptions. Adolescent males without romantic partners were found to rely on mothers as much as friends for Safe Haven, while romantically-involved adolescents used both friends and romantic partners equally for this function. Firstly with regards to adolescent males not in romantic relationships, the previous findings aforementioned established the likely presence of a developmental lag in attachment reorganization demonstrated by adolescent males. Alternatively, social expectations of autonomy and independence may limit the opportunities under which the attachment needs of adolescent males are activated and satisfied (Dwyer, 2005). Some researchers have argued that friendships are equally important to adolescent males and females, but the male identity in adolescence stresses autonomy, independence, and dominance (Cross & Madson, 1997; Leaper, 1994; Maccoby, 1990), and hence adolescent males more often reject close attachment needs compared to adolescent females (Gnoulati & Heine, 2001). This may be reflected in the characteristics of adolescent males' friendships, with adolescent males reporting larger friendship networks and less intimate relationships (Cairns et al., 1995; Graham, Cohen, Zbikowski, & Secrist, 1998). Adolescent males without romantic relationships could therefore rely on mothers as much as friends for Safe Haven because the nature of their friendships may not as quickly engender the type of emotional involvement and support as demonstrated in adolescent females' friendships (Branje et al., 2007; Connolly & Johnson, 1996).

The finding that romantically-involved adolescents turned as much to romantic partners as friends for Safe Haven is consistent with that of Markiewicz and her colleagues (2006), who found romantic partners to be used significantly more for Safe Haven between early and middle adolescence. They suggested that romantic partners may have begun to replace best friends as the main target for Safe Haven in accordance with attachment reorganization (Markiewicz et al., 2006). Other researchers have indicated that the functions of adolescent romantic relationships are similar to those of same-gendered friendships inclusive of intimacy, companionship and support, but additionally involve courtship and sexual experiences (Furman & Wehner, 1994; Kuttler & La Greca, 2004; Lempers & Clark-Lempers, 1993). These additional functions are postulated to accelerate the shifting of attachment needs to romantic partners as romantic relationships are usually more exclusive than friendships, and involve more physical contact (Davis & Todd, 1982). These factors are also characteristic of the mother-infant attachment relationship, and serve to facilitate the formation of an emotional bond (Hazan & Zeifman, 1994; Fraley & Davis, 1997; Zeifman & Hazan, 1997).

Research on attachment reorganization has also shown that it requires approximately two years for a romantic partner to become the target of all four attachment functions, but necessitates approximately 5.5 years before a close friend is chosen for all attachment needs (Fraley & Davis, 1997; Hazan & Zeifman, 1994). Consequently, adolescents with romantic relationships in this study are likely to be further in the process of attachment reorganization, and are now reorienting towards romantic partners from friends for Safe Haven.

Romantic Partners

Contrary to predictions and unlike the findings of Markiewicz and her colleagues (2006), adolescents with romantic relationships were found to use romantic partners and friends equally for Proximity-seeking. Romantic partners were instead selected most for Separation Protest by these romantically-involved adolescents.

Adolescent romantic relationships are proposed to first develop within the supportive structure of the peer network and close friendships (Brown, 1999; Connolly et al., 2004; Zimmer-Gembeck, 2002). Romantic partners are generally incorporated into the network of pre-existing friendships, with adolescents continuing to participate in peer activities as well as dating as part of their overall pattern of social interaction (Connolly et al., 2004). Previous research has indicated that romantic partners do not always replace friends in adolescent females' social networks, with the average adolescent female still continuing to spend a stable amount of time with friends, and actually more time with female best friends than romantic partners throughout high school (Zimmer-Gembeck, 1999). In turn, other studies have demonstrated that the romantic relationships of older adolescents are highly embedded in their overall peer networks (Connolly et al., 2000). Therefore, the development of a romantic relationship does not always occur at the expense of existing friendships, with adolescents continuing to use friends for Proximity-seeking even as they spend increasingly more leisure time with their romantic partners (Richards, Crowe, Larson, & Swarr, 1998; Zimmer-Gembeck, 1999, 2002).

The finding that romantic partners evoked the most Separation Protest is noteworthy because it has not been previously established in the adolescent attachment reorganization literature, but otherwise unsurprising. Adolescents spend increasing amounts of time with their romantic partners (Laursen & Williams, 1997; Zimmer-Gembeck, 1999, 2002), and missing them as well when separated appears to reflect the

early quality of attachment in romantic relationships (Markiewicz et al., 2006). Moreover, the affiliative and sexual behavioral systems are highly active during adolescence, and serve to reinforce both proximity and separation protest to the romantic partner as adolescents start to establish pair-bonds (Ainsworth, 1989; Kobak, 2009; Seiffge-Krenke, 1995).

Fathers

The only result completely consistent with previous research was that fathers were the least used attachment figure for all attachment functions (Freeman & Brown, 2001; Markiewicz et al., 2006). It has been suggested that adolescents consider mothers as the parental representative, and thus fathers are assumed to play a supportive role to mothers (Bowlby, 1969/1982; Freeman, Newland, & Coyl, 2010). Attachment to mothers and fathers are postulated to evolve differently during adolescence (Markiewicz, Doyle, & Brendgen, 2001) with adolescents generally reporting more intimacy and affection with mothers, and confiding more in mothers than fathers (Lamb, 2000; Rubin et al., 2004; Shulman & Seiffge-Krenke, 1997). Compared to mothers, fathers are perceived as less caring and having less interaction with their adolescents (Rice & Mulkeen, 1995; Youniss & Ketterlinus, 1987). Communication with fathers is often described by adolescents as cold and guarded (Freeman & Almond, 2010), with fathers usually consulted on practical matters and not personal issues (Youniss & Smollar, 1985). In general, adolescents are closer to their mothers and report being able to trust and depend on mothers relative to fathers in times of need (Maysel, Wiseman, & Hai, 1998).

Although less quality of affection, support and proximity to fathers is reported with increasing age, adolescent males and females continued to rate fathers as important attachment targets (Paterson et al., 1994). Researchers have suggested that mothers

provide primary-oriented care that emphasizes interpersonal relationships while fathers provide instrumental-oriented caretaking that stresses achievement (Richards, Gitelson, Petersen, & Hurtig, 1991). Thus, mothers may fulfill more of the affective developmental functions of attachment whilst fathers are more salient than mothers in fulfilling autonomy-facilitating functions (Kenny & Gallagher, 2002; Parke & Buriel, 1998). These postulations accord with the findings that fathers were used most for Secure Base when chosen (Markiewicz et al., 2006), and similarly provided felt security and protection in the event of physical harm to self or personal possessions (Freeman & Almond, 2010). The differing and complementary role that fathers have from mothers (Freeman et al., 2010; Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010) may therefore account for their relatively low placement in the adolescent attachment hierarchy, wherein fathers were least used by all adolescents irrespective of age, sex, or romantic status.

6.4.1.4 Gender Differences

As predicted, gender differences were demonstrated with adolescent males reporting higher attachment strength to fathers, and adolescent females turning more to friends for attachment functions. These gender differences were most pronounced for Safe Haven and Secure Base. Additionally, adolescent males used fathers more for Proximity-seeking than adolescent females. The present findings parallel previous research (e.g., Freeman & Brown, 2001; Markiewicz et al., 2006; Nickerson & Nagle, 2005), and extend current knowledge with gender differences demonstrated for Secure Base, and relative to fathers only, for Proximity-seeking.

Theorists have previously suggested that these gender differences likely arise as a result of pubertal and socialization processes. Females typically experience puberty at

younger ages than males (Paikoff & Brooks-Gunn, 1991) and are thus likely to begin the process of attachment reorganization earlier (Ainsworth, 1989; Allen, 2008; Nomaguchi, 2008). Adolescent females also demonstrate a higher reliance on friends for attachment needs as they are socialized to develop and maintain relationships (Fischer & Alapack, 1987; Gilligan, 1987), are more integrated into their friendship networks (Richards et al., 1998; Urberg et al., 1995) and are more comfortable sharing personal experiences with close friends and romantic partners at younger ages compared to males (Giordano, Longmore, & Manning, 2006; Youniss & Smollar, 1985).

In contrast, males purportedly have more in common with their fathers during adolescence, and are more able to use their fathers as role models and for advice as they develop their own identities (Markiewicz et al., 2006). Moreover, males are socialized to value dominance and independence during adolescence (Leaper, 1994; Maccoby, 1990) and achieve intimacy with friends through participation in shared activities in large groups instead (Buhrmester & Furman, 1987; Camarena et al., 1990).

These gender differences in the use of fathers and friends for Proximity-seeking, Safe Haven, and Secure Base are accordingly reflected in the characteristics of the relationships reported with both attachment figures. Regarding fathers, adolescent males were found more likely to confide in and seek advice from fathers regarding common gender concerns (Markiewicz et al., 2006; Papini, Farmer, Clark, Micka, & Barnett, 1990), and report more support from their fathers compared with adolescent females (Richardson, Galambos, Schulenberg, & Petersen, 1984). In turn, adolescent females purportedly perceive fathers as less available, and experience less closeness and intimacy with them during adolescence, ultimately resulting in less dependence on fathers with age (Lieberman et al., 1999; Paterson et al., 1994; Youniss & Smollar, 1985).

As for friends, adolescent females' friendships are characterized by greater self-disclosure, security, trust, and intimacy, with adolescent females reporting greater utilization of friends for emotional support than do males (Berndt & Perry, 1990; Dwyer, Fredstrom, Rubin, Booth-LaForce, Rose-Krasnor, & Burgess, 2010; Shulman et al., 1997). By contrast, adolescent males have a larger network of friends, but these comprise more superficial relationships (Bryant, 1994; Cairns et al., 1995; Vondra & Garbarino, 1988). Adolescent males also attribute less quality to their friendships (Kirkpatrick & Davis, 1994), and do not maintain friendships as conscientiously as adolescent females (Brendgen, Markiewicz, Doyle, & Bukowski, 2001).

It is worth mentioning that adolescent males and females did not differ in their utility of mothers as an attachment figure for all attachment functions. The importance of mothers as a central attachment figure for adolescent of both genders has previously been highlighted (Margolese et al., 2005), with adolescent males and females reporting themselves as closer to, and confiding more in mothers (Larson et al., 1996; Rice & Mulkeen, 1995; Youniss & Smollar, 1985). Overall, the findings underscore the presence of gender effects in the use of specific attachment targets to fulfill attachment needs, with these gender differences believed to become more prevalent beginning from early adolescence (Berndt & Perry, 1990; Nickerson & Nagle, 2005).

6.4.1.5 Romantic Status Differences

Romantic status differences in the use of attachment figures were found in this study, with romantically-involved adolescents generally reporting less attachment strength to mothers, fathers, and friends relative to adolescents without a romantic relationship. This finding parallels earlier research that demonstrated declines in attachment to existing attachment figures, with the length of romantic involvement facilitating

attachment reorganization (Feeney, 2004, Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006; Goh & Wilkinson, 2007). There are several notable exceptions with both romantically-involved adolescents and those without romantic partners found to report similar attachment strength to mothers for Proximity-seeking, and to use friends equivalently for Safe Haven, Separation Protest, and Secure Base.

Adolescents spend increasing amounts of time amid peers, and less time with parents and family (Larson et al., 1996; Youniss & Smollar, 1989) as part of establishing autonomy from parents. These processes of individuation and distancing from parents are normative in adolescence, and allow adolescents to decrease their emotional investment in parents while simultaneously diversifying their attachment needs among several sources (Scharf & Mayseless, 2007). That adolescents with and without a romantic relationship use mothers to a similar extent for Proximity-seeking suggests that the presence of a romantic partner does not detract further from the amount of time spent together with mothers, although it curtails the amount of leisure time spent with friends as demonstrated previously by researchers (Feiring, 1996; Zimmer-Gembeck, 1999, 2002).

Although social exchange theory predicts that romantic involvement would impact negatively on existing friendships (Rusbult, 1983), studies have shown that time commitment was the only cited “cost” associated with being in a romantic relationship (Feiring, 1996), with adolescents unable to spend as much time as previously on friendship activities (Nieder & Seiffge-Krenke, 2001). Having a romantic partner was not related to perceived social support from best friends, with friendships remaining stable as sources of emotional support, and unaffected by the presence of a romantic relationship (Connolly & Johnson, 1996; Connolly et al., 2000; Laursen & Williams, 1997). These previous studies account nicely for the current findings with romantically-involved adolescents desiring greater proximity to romantic partners than to friends, and

consequently spending less time with friends (Kuttler & La Greca, 2004; Zimmer-Gembeck, 1999) than do adolescents not involved in romantic relationships. This decline in companionship seems mostly reflected in terms of quantity rather than quality of friendships (Kuttler & La Greca, 2004), and thus adolescents with romantic partners continue to use close friends for other attachment needs similarly to those without romantic partners. Romantic involvement might even enhance feelings of closeness with intimate friends by eliciting discussions and advice-seeking on romance and sexuality (Scharf & Mayseless, 2007; Seiffge-Krenke, 1995; Simon, Eder, & Evans, 1992), and through providing support when a romantic relationship ends (Nieder & Seiffge-Krenke, 2001).

However, greater attachment strength to romantic partners and lower attachment strength to parents and friends did not translate into using romantic partners more than other attachment figures for all attachment functions. This study found that romantic partners were used to a similar extent as friends for both Proximity-seeking and Safe Haven, and were relied upon equally as friends and mothers for Secure Base. Romantic partners were the distinct targets only for Separation Protest.

These results accord with previous research suggesting that romantic partners gradually come to assume a more primary position in the adolescent attachment hierarchy only through time, experience, and incrementally meeting various needs (Connolly & Johnson, 1996; Furman & Buhrmester, 1992). Adolescent romantic relationships first emerge within the peer context where romantic activities are incorporated into pre-existing activities of the mixed-gender group, and thus adolescents maintain affiliations with their friends even after a romantic relationship is established (Brown, 1999; Carver et al., 2003; Connolly et al., 2000; Connolly et al., 2004). Friends also continue to provide felt security and a safe haven for romantically-involved adolescents through the provision of support and confidence to explore the world of

romantic and sexual relationships (Downey, Bonica, & Rincon, 1999; Nieder & Seiffge-Krenke, 2001; Simon et al., 1992).

In turn, mothers remain a secure base from whom romantically-involved adolescents can explore and develop both friendships and romantic relationships (Allen & Land, 1999; Hazan & Zeifman, 1994). Mothers are the intimate targets of long-term plans and moral or personal issues (Savin-Williams & Berndt, 1990), and are called upon in times of distress but otherwise taken for granted most of the time (Weiss, 1991). For example, secure adolescents with romantic partners did not differentiate between mothers, best friends, and romantic partners for attachment support, and still elected mothers as their primary attachment target despite turning to her less for attachment needs (Freeman & Brown, 2001).

Some scholars have suggested that the gradual shifting of attachment functions from parents to peers firstly occurs with changes to whom proximity maintenance and separation distress are directed (Hazan & Zeifman, 1994; Scharf & Mayseless, 2007). This postulation accords well with the present finding of romantic partners as the distinct target of Separation Protest, given that adolescents spend increasingly more time with their romantic partners, and the experience of missing a romantic partner comprise a unique set of behavioral, affective, and cognitive features which are unparalleled in other relationships (Le et al., 2008; Markiewicz et al., 2006). Adults who nominated their romantic partners as the main target of Separation Protest were also likely to name them as primary targets of the other three attachment functions (Hazan & Zeifman, 1994). Interestingly, this was similarly demonstrated in this study of adolescents with romantic partners chosen as a joint main target for Proximity-seeking, Safe Haven, and Secure Base.

Although the shifting of attachment needs from existing attachment figures to romantic partners is sometimes viewed as a transfer of attachment, the findings here

clearly demonstrate that there is not a supplanting of existing attachment figures (Wilkinson, 2006b), but rather an incorporation of the romantic partner into the adolescent's attachment hierarchy (Furman & Buhrmester, 1992). Overall, romantic partners are used to a similar extent as friends and mothers for attachment functions in adolescence, as demonstrated presently and by Freeman and Brown (2001).

6.4.1.6 Individual Differences in Attachment Models

In line with expectations, the patterns of attachment utility demonstrated by adolescents after adjustment for attachment anxiety and avoidance largely paralleled the model of attachment reorganization established in the prior analyses, with several exceptions. Specifically, further gender differences were established with adolescent males turning more to fathers and adolescent females to friends for Proximity-seeking and Separation Protest. Adolescent males also relied on mothers significantly more for Safe Haven compared to adolescent females. Furthermore, adolescent males used mothers exclusively for Separation Protest and Secure Base whilst both adolescent females and adolescents in romantic relationships selected friends primarily for Secure Base. Friends were chosen most for Safe Haven by romantically-involved adolescents, but mothers and romantic partners were still distinctively preferred as main attachment targets of early adolescents and late adolescents respectively.

Whereas all adolescents irrespective of romantic status did not distinguish between attachment targets after accounting for existing attachment models, adolescents higher in Anxiety were found to orient towards friends and romantic partners (if present) and away from mothers and fathers for attachment needs as predicted. Avoidance was found only to influence the amount of attachment strength reported with adolescents higher in Avoidance relying less on mothers, fathers, and friends for attachment functions.

Whereas attachment insecurity with mothers was found to affect attachment reorientation particularly among romantically-involved young adults (Markiewicz et al., 2006), no age differences in attachment reorganization was established in this study as a function of attachment expectancies.

The most parsimonious explanation for the differences noted between the two models of attachment reorganization relate to the different analyses conducted. An advantage of partialling out the influences of global attachment models is that it allows the identification of normative markers of attachment that are not otherwise confounded with individual differences (Hazan et al., 2004). Moreover, there is increased sensitivity of the analyses to detect differences between adolescents including unequal or insufficient sample sizes (Tabachnick & Fidell, 2001), such as the small number of early female adolescents with romantic relationships recruited. Essentially, the relative positioning of attachment targets for different attachment needs remained the same but differences in the extent of reliance on attachment figures and of sex differences at the level of specific attachment functions were accentuated.

In light of the differences demonstrated in the model of attachment reorganization after adjustment for Anxiety and Avoidance, several revisions were made in the substantial interpretations of the results, which require further discussion.

6.4.1.6.1 Attachment Functions

Mothers

After adjusting for global attachment models, mothers were not selected most for Secure Base by either adolescent females or adolescents in romantic relationships with both preferring friends for this function. Adolescent males, however, used mothers most for Separation Protest and Secure Base irrespective of age. These findings accord with

studies indicating maternal support as more important for the wellbeing of adolescent males than females (Shek, 2005; Stolz, Barber, & Olsen, 2005) despite adolescents of both sexes generally reporting similar support from mothers (Colarossi & Eccles, 2003). It appears that adolescent males' reliance on mothers for Separation Protest and Secure Base may be reflective of a possible developmental lag in reorientation towards friends for these needs relative to adolescent females and romantically-involved adolescents.

In contrast to adolescent males, adolescent females establish more intimate and supportive peer relationships at an earlier age (Armsden & Greenberg, 1987; Sharabany, Gershoni, & Hofman, 1981; Zimmer-Gembeck & Petherick, 2006) and are more competent at displaying emotional support (Buhrmester, Furman, Wittenberg, & Reis, 1988). Difficulties experienced by adolescent males in establishing intimacy in friendships have been suggested to reflect differences in preference and ability, with concerns about masculinity and competition limiting the extent of self-disclosure among male peers (Leaper, 1994; Leaper & Anderson, 1997). Adolescent males also report a lack of reciprocity or support in their friendships (Youniss & Smollar, 1985) and are more likely to stress their independence (Crosnoe & Elder, 2004; Cross & Madson, 1997).

Adolescent females may be more advanced than adolescent males regarding the importance of affiliative qualities in romantic relationships, with adolescent females preferring self-disclosure as a means of achieving intimacy with friends of both sexes and romantic partners (Feiring, 1999). Adolescent males were found more willing to disclose to female friends and romantic partners only (Reisman, 1990; Youniss & Smollar, 1985) with romantically-involved males engaging in more intimacy than generally present in their male friendships (Giordano et al., 2006). More adolescent females report a romantic relationship (Carver et al., 2003), and also greater positive and fewer negative interactions in their friendships compared to adolescent males

(Kuttler, La Greca, & Prinstein, 1999; Lempers & Clark-Lempers, 1993). Adolescent males apparently experience a steeper improvement in their same-sex friendships than female adolescents (Way & Greene, 2006) with these gender differences in intimacy waning by late adolescence (Azmitia, Kamprath, & Linnet, 1998; Feiring, 1999). Thus, while adolescent females and males are postulated to reorient towards peers for support around the same time, this shift occurs more gradually and becomes evident over longer periods of time for the latter (Helsen et al., 2000), with adolescent males using mothers as a secure base from which to explore their peer relationships.

Friends

Romantically-involved adolescents were also found to rely primarily on friends for Safe Haven after accounting for Anxiety and Avoidance. It would appear that aside from adolescent males who used mothers and friends similarly for this function, all adolescents regardless of age or romantic status selected friends most for Safe Haven as previously demonstrated by Markiewicz and her colleagues (2006).

Friendships are postulated to contribute uniquely to romantic relationships (Connolly & Goldberg, 1999; Furman, 1999). Friendships allow adolescents to refine the socio-emotional competencies required for romantic relationships and to co-construct relationship norms and expectations particularly in younger adolescence (Scharf & Mayseless, 2001; Simon et al., 1992). They provide a forum for sharing information and discussing sexual and romantic issues, and may additionally help adolescents adjust to dating and romantic relationships by providing support, advice and companionship during romantic encounters (Feiring, 1999; La Greca & Mackey, 2007; Markiewicz et al., 2006).

Steady romantic relationships tend to be relatively infrequent and of shorter durations in adolescence (Connolly & Konarski, 1994; Doyle et al., 2003) and thus

adolescents also report more support from their friends than romantic partners (Connolly & Johnson, 1996). In fact, adolescent females dating casually reported greater disclosure and emotional support from best friends compared to romantic partners (Kuttler & La Greca, 2004). More importantly, support from a best friend was found to remain stable and independent of having a romantic relationship (Connolly & Johnson, 1996; Kuttler & La Greca, 2004; Laursen & Williams, 1997). The use of friends for Safe Haven implies that friends may be more than affiliative relationships given that they are relied upon for emotional support and comfort even by adolescents involved in a romantic relationship (Markiewicz et al., 2006).

6.4.1.6.2 Gender Differences

After adjustment for individual differences in attachment models, adolescent males were additionally found to prefer fathers and adolescent females their friends for Proximity-seeking and Separation Protest. Adolescent males also reported higher attachment to mothers for Safe Haven relative to adolescent females. These findings advance previous research by establishing that gender differences in the utility of specific attachment targets extend beyond Safe Haven (e.g., Markiewicz et al., 2006; Trinke & Bartholomew, 1997) to incorporate the other functions of Proximity-seeking, Separation Protest, and Secure Base. The differential rates of attachment reorganization by adolescent males and females are further highlighted, with the former evincing an apparent developmental lag behind the latter in this process.

Adolescence is suggested to be a period of gender intensification characterized by increased emphasis on the same-sex parent-adolescent relationship (Hill & Lynch, 1983; Meadows et al., 2006). Fathers are purportedly more involved with and have more influence on sons than daughters (Harris & Morgan, 1991; Parke, 2002; Rossi, &

Rossi, 1990). Fathers and adolescent sons may identify with one another more and share similar styles of interaction (Doherty, Kouneski, & Erickson, 1998) and activities (Markiewicz et al., 2001; Rubin et al., 2004). Moreover, bonding with fathers over shared activities is consistent with the development of a masculine self-image in adolescent males (Buhrmester & Furman, 1987; Camarena et al., 1990; Hay & Ashman, 2003). As adolescent males are liable to spend more time with fathers than do adolescent females, they are also likely to report using fathers more for Proximity-seeking and Separation Protest.

In turn, adolescent females establish intimate friendships with peers at an earlier age than adolescent males, with these friendships both more intimate and influential for females than males (Rose & Rudolph, 2006; Rubin et al., 2004). Adolescent females are more oriented towards their friends, and their friendships tend to be higher in relationship quality (Benenson & Benarroch, 1998; Parker & Asher, 1993). Adolescent females engage in more support, openness, and interaction maintenance behaviors in their friendships compared to adolescent males (Hall, 2011; Kirkpatrick & Davis, 1994; Sprecher, 1996). Thus, adolescent females are likely more invested in developing and maintaining friendships (Fischer, 1981), and accordingly use friends more for Proximity-seeking and Separation Protest than adolescent males.

The finding that adolescent males chose mothers more for Safe Haven relative to adolescent females is consistent with research demonstrating that adolescent males establish weaker peer attachment relationships than adolescent females (Nickerson & Nagle, 2005; Papini, Roggman, & Anderson, 1991). Adolescent males are postulated to rely more on mothers during stressful periods aligned with the traditional role of mothers as caregivers (Papini et al., 1991). Mothers may also be more comfortable in providing adolescent sons with support when they are distressed (Kenny et al., 1998). By contrast, female adolescents experience greater intimacy in their friendships

beginning from early adolescence (Azmitia et al., 1998; Zimmer-Gembeck & Petherick, 2006) and both utilize and receive more emotional and instrumental support from friends than do males (Kenny et al., 1998; Turner, 1994).

Furthermore, adolescent males and females may have different expectations regarding self-disclosure with females sharing experiences to gain support, but males doing so as a way of sharing information and meeting external demands (Belle, Burt & Cooney, 1987; Jackson & Warren, 2000). Adolescent males are generally disinclined to demonstrate vulnerable emotions or to discuss emotion-laden topics in front of male peers (Dwyer et al., 2010; Leaper & Anderson, 1997). Despite selecting friends as much as mothers for Safe Haven, adolescent males may be using friends as distractions from stressful events rather than for emotional comfort and instrumental support (Jackson & Warren, 2000). Given that adolescent males also utilize mothers most for Separation Protest and Secure Base, it appears that adolescent males may rely more on their relationships with mothers as they develop their interpersonal skills throughout adolescence (Richards et al., 1991).

6.4.1.6.3 Romantic Status Differences

Aforementioned, greater attachment strength to romantic partners did not equate to using them more than other attachment targets for attachment needs. After accounting for attachment expectancies, friends were found to be the preferred target of both Safe Haven and Secure Base by romantically-involved adolescents. For early adolescents with romantic relationships, mothers remained the main attachment target while romantic partners were used least and significantly less than friends. Romantic partners were, however, the favored attachment figure of romantically-involved late adolescents. These findings highlight the role of friends as intermediary attachment targets of

romantically-involved adolescents (Fraley & Davis, 1997; Waters & Cummings, 2000), and accord with Bowlby's (1969/1982) theory that romantic partners replace parents, usually mothers, as the primary attachment figure in the attachment hierarchy by young adulthood.

Waters and Cummings (2000) have described friends as ad-hoc attachment figures that serve safe haven and secure base functions but do not become primary attachment figures. Friends may play a crucial role in early and middle adolescence wherein romantic relationships are predominantly characterized by affiliative features (Furman, 1999). Specifically, romantically-involved adolescents reported same-sex friends as the most supportive individuals in their social networks, and more than mothers and romantic partners (Furman & Buhrmester, 1992). Friendships were also perceived to be more intimate than romantic relationships (Werebe, 1987), with romantically-involved adolescents engaging more positive interactions and responsiveness with friends relative to romantic partners (Furman & Shomaker, 2008). Given that adolescents' friendships are longer in duration (Furman & Shomaker, 2008) whereas the relatively transient nature of adolescent romantic relationships preclude the development of attachment bonds (Campa et al., 2009), romantically-involved adolescents are likely to continue using friends for advice and as a secure base from which to explore their romantic relationships (Brown, 1999; Connolly et al., 2004; Waters & Cummings, 2000).

Moreover, friendships share many of the same characteristics as romantic relationships and contribute to the development of reciprocity and mutual intimacy considered central to romantic relationships (Furman & Wehner, 1994; Furman et al., 2002). Studies have shown that the skills necessary for establishing and maintaining successful friendships are fundamental for those needed to establish romantic relationships (Collins, Hennighausen, Schmit, & Sroufe, 1997). While most friendships will not become enduring attachment bonds despite serving Safe Haven and Secure

Base (Ainsworth, 1989; Waters & Cummings, 2000), friends may nonetheless serve an essential role in helping romantically-involved adolescents develop the competencies required for establishing adult pair-bonds (Connolly et al., 2000; Furman, 1999).

The finding that romantic partners were both the most and least used attachment targets of late and early romantically-involved adolescents respectively concurs with the process of attachment reorganization (Hazan & Zeifman, 1994; Markiewicz et al., 2006; Doherty & Feeney, 2004). Although the majority of youth view a romantic relationship as their closest relationship by middle adolescence, it is not until late adolescence that romantic relationships surpass friendships and mother-adolescent relationships in affection, intimacy, companionship, and support (Buhrmester, 1996; Furman & Buhrmester, 1992; Laursen & Williams, 1997). These qualitative changes are largely attributed to increases in adolescents' experiences with romantic relationships and developmental maturity (Connolly & Goldberg, 1999; Connolly et al., 1999; Furman & Wehner, 1994).

Attachment bonds take time to form (Bowlby, 1969/1982; Hazan et al., 2004), requiring an average of two years to completely shift all four attachment functions to romantic partners (Fraley & Davis, 1997; Hazan & Zeifman, 1994). Accordingly, it is from late adolescence that romantic partners become major figures in the functioning of the attachment, caregiving, affiliative, and sexual behavioral systems (Furman & Wehner, 1997) and replace mothers at the top of the attachment hierarchy as primary attachment figure (Hazan & Shaver, 1994; Trinke & Bartholomew, 1997).

6.4.1.6.4 Global Attachment Models

Only partial support was established for the hypotheses regarding the influences of global attachment models on attachment reorganization. As hypothesized, adolescents

high in Anxiety were found to turn more to friends and romantic partners and away from parents, particularly mothers, for attachment functions. By contrast, Avoidance did not inhibit the reorientation of attachment needs from parents to peers, but rather reduced reported attachment strength to mothers, fathers, and friends only. No age differences in the utility of attachment targets for attachment needs was demonstrated unlike the findings established by Markiewicz and her colleagues (2006). These results concur with suggestions that the influence of attachment working models on adolescent attachment reorganization is complicated (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006) with Anxiety and Avoidance differentially affecting who adolescents use for attachment needs and the amount of attachment strength reported respectively.

Anxiety

Aligned with suggestions that adolescents insecurely attached to parents may reorient earlier towards peers to fulfill unsatisfied attachment needs (Ainsworth, 1989; Helsen et al., 2000; Wilkinson, 2004), adolescents high in attachment anxiety were found to choose friends and romantic partners (if present) most for attachment functions as previously demonstrated in the attachment reorganization literature (e.g., Freeman & Brown, 2001; Markiewicz et al., 2006). Romantically-involved adolescents were more likely to increase their use of romantic partners than friends, which accords with reports that the majority of adolescents defined as anxious selected romantic partners most for attachment functions (Freeman & Brown, 2001; Hazan & Zeifman, 1994). Anxious attachment is characterized by a fear of abandonment and a desire for extreme closeness (Feeney, 2004; Mikulincer & Shaver, 2007). Highly anxious individuals tend to fall in love rapidly and frequently (Hazan & Shaver, 1987; Morgan & Shaver, 1999). Anxious adolescents may be quick to forge alternative close relationships with peers, especially romantic partners, and immediately ready to shift attachment needs to peers in their

attempts to compensate for what is missing in their parental relationships (Friedlmeier & Granqvist, 2006; Hazan & Zeifman, 1994; Mayseless, 2004).

In turn, adolescents were found to rely less on parents, especially mothers, for attachment functions with increasing anxiety. Mothers are predominantly the primary attachment figure of adolescent attachment hierarchies (Margolese et al., 2005; Trinke & Bartholomew, 1997), and thus adolescents high in attachment anxiety are likely to turn away from mothers towards their friends and romantic partners to compensate for the poor quality of their maternal attachment relationship (Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). By contrast, fathers are usually the least used attachment target of adolescents regardless of age, gender, and romantic status (Freeman & Brown, 2001; Markiewicz et al., 2006), and the shifting of attachment needs likely detracts less from fathers than mothers. For adolescents high in attachment anxiety, mothers may remain the primary attachment figure until a close friendship or romantic relationship is formed, after which a shifting of attachment needs is readily enacted in the hope for greater attachment security (Freeman & Brown, 2001).

Avoidance

Avoidance was shown to only modestly predict attachment strength with adolescents higher in attachment avoidance found to use mothers, fathers, and friends less as attachment targets. This finding is consistent with studies demonstrating that avoidant adolescents reported less attachment strength to attachment targets and nominated either themselves or “nobody” as their primary attachment figure (Freeman & Brown, 2001; Hazan & Zeifman, 1994; Sharabany, Mayseless, Edri, & Lulav, 2001). Avoidant attachment is characterized by a fear of closeness and dependency (Bartholomew & Horowitz, 1991; Mikulincer & Shaver, 2007), and thus avoidant adolescents may be less likely to seek comfort and support when they are distressed (Feeney & Collins,

2004; Maysseless, 2004). Avoidance may circumscribe the extent to which the adolescent seeks out compensatory attachment figures (Friedlmeier & Granqvist, 2006) or is willing to become attached to a peer (Aron, Aron, & Smollan, 1992; Sharabany et al., 2001; Rowe & Carnelley, 2005).

Avoidance was, however, not found to influence attachment strength to attachment figures among romantically-involved adolescents. It could be that adolescents who avoid spending time with or being close to peers are less likely to form romantic relationships (Hazan & Zeifman, 1994; Feeney, 2004). Studies have shown that avoidant adults demonstrate particularly weak attachment to their romantic partners (Feeney, 2004) with the association between dismissing attachment and use of romantic partners for attachment needs weaker than that established with best friends as attachment targets (Fraley & Davis, 1997). Whilst cross-sectional analyses preclude the ability to determine if attachment avoidance does inhibit the shifting of attachment from parents to friends and romantic partners, it appears based on current findings that avoidant adolescents may be deactivating of attachment such that they avoid both parents and other potential attachment figures (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006) and are less inclined to become attached to peers in the first place (Fraley & Davis, 1997; Rowe & Carnelley, 2005).

Differences in methodologies employed are likely responsible for the present inability to replicate age differences in the use of attachment figures as demonstrated by Markiewicz and her colleagues (2006). The current research conceptualized individual differences in attachment models according to the global dimensions of attachment anxiety and avoidance whereas Markiewicz et al.'s (2006) study identified the different attachment styles in reference to mothers only. They also conducted separate analyses for mothers, fathers, best friends, and romantic partners as attachment targets whilst this study employed analyses that simultaneously identified attachment strength to all

attachment targets after accounting for attachment expectancies. More pertinently, Markiewicz et al.'s (2006) study also recruited a young adult sample for which the effects of attachment insecurity were most pronounced. By contrast, the present study sampled only early and late adolescents.

Previous research has found only modest correlations between attachment to parents and peers indicating that the attachment system can be unique for different relationships even though these attachment relationships are interrelated (Crowell et al., 1999; La Guardia et al., 2000). Attachment security to mothers may not represent either the more contextualized and relationship-specific models that adolescents form with other attachment figures, or the more generalized and abstracted attachment models that adolescents form through their attachment history with parents and peers (Collins & Read, 1994; Klohnen et al., 2005; Overall, Fletcher, & Friesen, 2003). Therefore, the current findings more resemble those which demonstrated neither age nor gender differences in the use of attachment figures as a function of attachment security (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). Whilst Markiewicz and her colleagues (2006) found attachment insecurity regarding mothers to influence the extent to which only mothers and romantic partners were used, both Anxiety and Avoidance were demonstrated to influence the utility of mothers, fathers, friends and romantic partners for attachment needs in this study.

6.4.2 Limitations and Future Directions

The current study has several limitations that should be considered. Firstly, this study relied solely on just one self-report instrument, the modified ANQ, and one single source of information, the adolescents sampled for this study. This measure is subjected to the same problems associated with using self-reports, including response biases due

to social desirability or memory distortions, and potential lack of awareness (Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). While caution is warranted before generalizing to actual behaviors or to unconscious aspects of attachment relationships (Markiewicz et al., 2006), researchers have argued that adolescent perceptions are valid representations of their experiences regardless of whether their perceptions are congruent with actual behaviors (Freeman & Brown, 2001; Wintre, Yaffe, & Crowley, 1995).

This study recruited a relatively small number of romantically-involved adolescents, particularly among early female adolescents. Only one-third of all adolescents reported current romantic relationships, but this percentage has similarly been reported by Zimmer-Gembeck (2002) for female high school students (30.0%). Statistical analyses conducted may have lacked sufficient power to establish significant findings regarding romantic status differences across all adolescents and between early and late romantically-involved adolescents. Future replications with larger samples of romantically-involved adolescents, particularly among early adolescents, would be important to establish the reliability of previous findings (e.g., Markiewicz et al., 2006). This might be challenging as adolescent romantic relationships are not as prevalent as commonly believed, particularly in the early years of adolescence (Carver et al., 2003; Feiring, 1996).

It must also be recognized that the notion of replacement is inherent to the modified ANQ with up to three targets ranked for each item. Ratings provided indicate a preference of one target over another, and a higher score for one target always implies a lower score for all the remaining targets (Mayseless, 2004). Individuals are constrained in their use of tied rankings to identify joint attachment figures for attachment functions, and the relative extent to which an attachment figure is used by comparison to another attachment figure cannot be determined (Mayseless, 2004; Trinke & Bartholomew,

1997). Future research which allows joint rankings or designates percentages that identify the extent to which each attachment target is used for an attachment function could perhaps provide a more accurate measure of attachment hierarchies in adolescence.

Suggestions have been made that assessment measures of attachment functions do not accurately tap attachment support from fathers (Freeman & Almond, 2010). Aforementioned, fathers are postulated to have different yet complimentary roles to mothers (Freeman et al., 2010; Hazen et al., 2010) with fathers responsible for providing instrumental-oriented support and fostering security in exploration (Freeman & Almond, 2010; Grossmann, Grossmann, Kindler, & Zimmermann, 2008; Paquette, 2004). Fathers provide a secure base from which adolescents explore peer relationships and can be counted upon as a reliable alliance in the event of a potential or genuine threat (Bosmans, Braet, van Leeuwen, & Beyers, 2006; Freeman & Almond, 2010). Consequently, future research may better assess attachment to fathers by examining felt security to fathers in relation to physical dangers or instrumental needs as opposed to emotional distress (Freeman & Almond, 2010).

6.4.3 Conclusion

In conclusion, the present study has both replicated and extended existing research demonstrating the model of attachment reorganization, and validated most of the previous findings regarding developmental differences in the choice of various attachment figures for attachment functions. It has provided a cross-sectional snapshot of attachment reorganization as it occurs for both early and late adolescents in Australia, and contributes to current knowledge by additionally examining the differential use of attachment figures for Separation Protest and the influences of global attachment

models on attachment reorientation. Several findings of significance include the presence of an apparent developmental lag in attachment reorganization for adolescent males compared to adolescent females, and the greater utility of fathers for all four attachment functions by the former. By contrast, adolescent females evinced a higher reliance on friends for these functions. Mothers remained a central attachment figure for all adolescents whereas fathers were selected least for all attachment functions. Friends remained important targets of attachment needs regardless of current romantic status. Romantic partners were the preferred attachment figures of romantically-involved adolescents solely for Separation Protest, although being in a romantic relationship did not translate into using romantic partners more than existing attachment figures for other functions. Anxiety facilitated the reorientation towards peers, and away from mothers especially, for attachment needs, whereas Avoidance inhibited the amount of attachment strength initially expressed to mothers, fathers, and friends only.

Most importantly, the present findings have demonstrated that the shifting of attachment functions from one attachment figure to another does not occur in an “all or none” fashion, with the displacement of existing attachment figures for attachment needs (Wilkinson, 2006b). Rather, new attachment figures (i.e., romantic partners) are incorporated into the attachment hierarchy, with different attachment figures used to varying degrees to satisfy different attachment functions as per the developmental needs of adolescents (Furman & Buhrmester, 1992; Sullivan, 1953). The patterns of utility of attachment targets were similar even after accounting for individual differences in existing attachment models.

Attachment reorganization is postulated to be a normative process, yet given the many developmental differences occurring simultaneously during adolescence, another pertinent question concerns the importance of these different attachment figures for adolescent psychological health. Suggestions have been made that the effects of

attachment reorganization might be best demonstrated by examining the influences of attachment relationships on adolescent wellbeing, rather than focusing on differences in mean attachment strength (Goh, 2007; Wilkinson, 2006b). Therefore, the focus of this dissertation moves to examine how various attachment relationships affect adolescent adjustment.

CHAPTER 7

Cross-sectional Study: Adolescent Adjustment

7.1 Objective Two: Attachment Reorganization and Adolescent Adjustment

Individuals are postulated to exhibit the most optimal psychosocial outcomes when they have at least one attachment figure to rely upon as a safe haven in times of distress and as a secure base from which to explore the environment (Cooper et al., 2004). In the previous chapter, the findings of previous research demonstrating the developmental model of attachment reorganization during adolescence were replicated. It was found that adolescents demonstrated differential use of specific attachment figures for various attachment functions according to age, gender, global attachment models, and current romantic involvement. Examining how the differential use of attachment figures for attachment needs relates to adolescent adjustment constitutes a logical progression towards an enhanced understanding of the relative importance of different attachment relationships for adolescent wellbeing (Wilkinson, 2006b).

Theorists propose that adolescents shift their attachment needs from parents to peers as part of healthy development (Bowlby, 1969/1982; Hazan & Zeifman, 1994). During attachment reorganization, adolescents select different attachment figures in their attachment networks to fulfill various needs depending on their developmental stages (Allen, 2008; Sullivan, 1953). Accordingly, previous research has highlighted the importance of multiple attachment figures for promoting healthy adolescent adjustment (Laible et al., 2000). Both the composition of the attachment hierarchy and the relative importance of different attachment figures for adolescent wellbeing are associated with demographic variables such as age, gender, and the presence (or absence) of a romantic

relationship (Goh & Wilkinson, 2007; Rosenthal & Kobak, 2010; Wilkinson, 2006b). Specifically, previous research has indicated that gender (Anderson, Holmes, & Ostresh, 1999; Hay & Ashman, 2003; Ma & Huebner, 2008) and age of pubertal timing (Gaylord-Harden, Taylor, Campbell, Kesselring, & Grant, 2009; Papini et al., 1991) may impact the relationship between attachment and adolescent outcomes. In turn, romantically-involved adolescents may additionally select romantic partners as attachment figures with these partners successively used more for attachment functions with increasing length of romantic relationship (Feeney, 2004; Goh & Wilkinson, 2007)

Adolescents' choice of attachment figures also derives from their perceptions of the attachment figure's availability and responsiveness to their attachment needs (Hazan et al., 2006; Freeman & Brown, 2001; Shaver & Mikulincer, 2002) with the degree of security experienced in each relationship partially due to existing attachment models (Cook, 2000; La Guardia et al., 2000; Feeney, 2002). Attachment security has been found to directly influence adolescent adjustment (Cooper et al., 1998; Cooper et al., 2004; Mikulincer & Shaver, 2007) with previous research indicating that general attachment models made unique contributions to adjustment outcome variables even when considered in the context of relationship-specific attachment models (Klohnen et al., 2005; Zhang et al., 2011).

Therefore, the current study investigates the associations between adolescent adjustment with different attachment relationships in the attachment network, the potential moderating effects of age and gender on the relationships with different attachment figures, and global attachment models.

7.1.1 Attachment Relationships

Parents and peers are both considered significant for adolescent adjustment although their influences may differ (Laible et al., 2000; Wilkinson, 2004) and were found to differentially affect adolescent adjustment during attachment reorganization (Goh & Wilkinson, 2007; Rosenthal & Kobak, 2010). Therefore, links between each of the different attachment figures and adolescent psychological health are hypothesized, although the extent of association is likely to differ between attachment figures and adjustment indices.

7.1.2 Age Differences

Age differences in accordance with an attachment reorganization perspective were previously established with attachment to parents and peers more pertinent for the wellbeing of younger and older adolescents respectively (Wilkinson, 2006b; Nomaguchi, 2008). Hence, higher attachment strength to parents is expected to be more correlated with the psychological health of early adolescents compared to late adolescents, while greater attachment strength to friends and romantic partners (if present) will be more associated with the wellbeing of late adolescents relative to early adolescents.

7.1.3 Gender Differences

It is also anticipated that in line with the 'sex allegiance' effect (Rice et al., 1997; Paterson et al., 1994; Wilkinson, 2006b), mother attachment will be more important for the wellbeing of female adolescents and father attachment will have greater bearing on

the wellbeing of male adolescents. Moreover, female adolescents generally report higher attachment strength to peers relative to adolescent males (Freeman & Brown, 2001; Markiewicz et al., 2006), with greater attachment to friends and involvement in romantic relationships having more consequences for females' psychological wellbeing (Joyner & Udry, 2000; Rosenthal & Kobak, 2010; Welsh et al., 2003). It is further hypothesized that the relationship between peers (friends and romantic partners) and adolescent adjustment will be stronger among females than males.

7.1.4 Individual Differences in Attachment Models

Insecure attachment working models predispose adolescents to psychological maladjustment through both their choice of attachment figures and the patterns of cognition, emotions, and behaviors exhibited (Cooper et al., 1998; Freeman & Brown, 2001; Mikulincer et al., 2003; Wilkinson, 2006a). Specifically, attachment anxiety and avoidance were demonstrated to differentially impact adolescent psychological health independently of attachment relationships, with the former a better predictor of adjustment (Mikulincer & Florian, 2001; Mikulincer & Shaver, 2007; Zhang et al., 2011). The current study thus predicted that global attachment models would uniquely predict adolescent psychological adjustment over and above the links established with different attachment relationships. Anxiety is expected to more strongly contribute to adolescent adjustment compared with Avoidance.

7.2 Method

The method used for this aspect of the cross-sectional study investigating attachment reorganization and adolescent adjustment has previously been described in section 6.2.

7.3 Results

7.3.1 Overview

The results of the statistical analyses are reported in the following sections. Firstly, descriptive statistics of the adolescent adjustment indices are presented. Secondly, the associations between demographic variables, attachment strength, global attachment models, and adolescent wellbeing are examined. Thirdly, regression analyses are presented regarding the contributions of demographics, attachment relationships, and global attachment models towards the psychological health outcomes.

7.3.2 Adolescent Adjustment Descriptive Statistics

Descriptive statistics of the four indices of adolescent adjustment are presented in Table 7.1. All variables were normally distributed except for Depression, which was positively skewed towards fewer symptoms being reported among both early and late adolescents. This was as expected in a non-clinical population, and not transformed (Pallant, 2005).

Table 7.1

Means, Standard Deviations, and Range for Adolescent Adjustment Variables

		Early Adolescents (<i>n</i> = 183)			Late Adolescents (<i>n</i> = 328)		
		(Males = 74, Females = 109)			(Males = 90, Females = 238)		
		<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Depression	Males	16.43	4.79	10-36	18.42	6.08	10-38
	Females	16.86	5.89	10-36	20.87	6.60	10-39
	Total	16.69	5.46	10-36	20.19	6.54	10-39
Self-esteem	Males	54.59	8.84	27-73	50.96	10.55	30-80
	Females	54.76	10.58	28-80	46.55	10.61	21-79
	Total	54.69	9.89	27-80	47.76	10.76	21-80
Stress	Males	46.55	12.22	21-77	41.02	10.59	17-62
	Females	44.76	13.98	17-74	49.66	9.52	25-72
	Total	45.49	13.29	17-77	47.29	10.54	17-72
School Attitude	Males	27.87	3.53	20.57-36	27.58	3.62	17-35
	Females	29.06	4.83	16-39	28.16	3.80	17-38
	Total	28.58	4.38	16-39	28.00	3.75	17-38

To determine the effects of demographics on adolescent wellbeing, a three-way between-subjects multivariate analyses of variance (MANOVA) was conducted with Cohort (Early Adolescents vs. Late Adolescents), Sex (Male vs. Females) and Romantic Status (No Romantic Relationship vs. In a Romantic Relationship) as the independent variables and Depression, Self-esteem, Stress, and School Attitude as the dependent variables. Analyses were conducted using all the adolescents surveyed ($N = 511$).

Unequal sample sizes resulted between the groups upon categorization according to the

three independent variables. Equality of covariance was violated (Box's $M = 144.02$, $p < .001$) and thus a strict level of significance ($p < .01$) was adopted.

Results revealed a significant main effect for Cohort, $F(4, 500) = 9.41$, $p < .001$, Pillai's Trace = .070, partial $\eta^2 = .070$, and Sex, $F(4, 500) = 5.99$, $p < .001$, Pillai's Trace = .046, partial $\eta^2 = .046$, with these main effects further qualified by a significant Cohort by Sex two-way interaction, $F(4, 500) = 3.66$, $p = .006$, Pillai's Trace = .028, partial $\eta^2 = .028$. The main effect for Romantic Status was not statistically significant, $F(4, 500) = 2.91$, $p = .021$, Pillai's Trace = .023, partial $\eta^2 = .023$. Means and standard deviations for the adolescent adjustment variables are presented in Table 7.2.

Table 7.2

Means and Standard Deviation for the Adolescent Adjustment Variables According to Cohort, Sex, and Romantic Status for All Adolescents

	Early Adolescents				Late Adolescents			
	Male		Female		Male		Female	
	(n = 74)		(n = 109)		(n = 90)		(n = 238)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No Romantic								
Relationship	(n = 47)		(n = 99)		(n = 62)		(n = 133)	
Depression	16.25	4.13	16.47	5.67	18.39	6.27	20.62	7.06
Self-esteem	53.53	9.40	54.82	10.82	50.82	10.66	46.68	11.40
Stress	47.21	12.88	44.33	14.20	41.06	10.50	49.29	9.87
School Attitude	28.05	3.95	29.30	4.93	27.55	3.85	28.41	4.31
In a Romantic								
Relationship	(n = 27)		(n = 10)		(n = 28)		(n = 105)	
Depression	16.76	5.83	20.70	6.93	18.50	5.76	21.18	5.99
Self-esteem	56.44	7.58	54.20	8.27	51.25	10.48	46.40	9.56
Stress	45.41	11.13	49.00	11.27	40.93	10.97	50.11	9.08
School Attitude	27.54	2.71	26.63	2.88	27.64	3.09	27.85	3.01

7.3.2.1 Main Effects

Cohort

Follow-up univariate *F* tests conducted revealed a significant main effect of Cohort for Depression, $F(1, 503) = 8.14, p = .005$, partial $\eta^2 = .016$, with late adolescents

reporting more depressive symptoms than early adolescents. There was also a significant main effect of Cohort for Self-esteem, $F(1, 503) = 22.23, p < .001$, partial $\eta^2 = .042$, with early adolescents endorsing greater self-esteem compared with late adolescents. Estimated marginal means are found in Table 7.3. There were no significant main effects of Cohort for Stress, $F(1, 503) = .70, p = .41$, partial $\eta^2 = .001$, and School Attitude, $F(1, 503) = .001, p = .97$, partial $\eta^2 = .000$.

Table 7.3

Estimated Marginal Means for Depression and Self-esteem According to Cohort

	Early Adolescents ($n = 183$)		Late Adolescents ($n = 328$)	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Depression	17.55	.63	19.67	.40
Self-liking	54.75	1.07	48.79	.68

Sex

The significant main effect of Sex for Depression, $F(1, 503) = 9.26, p = .002$, partial $\eta^2 = .018$, revealed that adolescents females reported more depression compared to adolescent males. There was another significant main effect of Sex for Stress, $F(1, 503) = 11.03, p = .001$, partial $\eta^2 = .021$, with female adolescents experiencing greater levels of stress relative to adolescent males. Estimated marginal means are presented in Table 7.4. No significant main effects of Sex for either Self-esteem, $F(1, 503) = 3.87, p = .05$, partial $\eta^2 = .008$, or School Attitude, $F(1, 503) = .52, p = .47$, partial $\eta^2 = .001$, were demonstrated.

Table 7.4

Estimated Marginal Means for Depression and Stress According to Sex

	Male ($n = 164$)		Female ($n = 347$)	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Depression	17.47	.51	19.74	.55
Stress	43.65	.93	48.19	1.00

7.3.2.2 Two-way Interactions

Cohort by Sex

As illustrated in Figure 7.1, the significant Cohort by Sex interaction revealed that male and female adolescents differed only on their self-reports of Stress according to age, $F(1, 503) = 9.36, p = .002$, partial $\eta^2 = .018$. Table 7.5 contains the means and standard deviations for Stress. There were no interactive effects between Cohort and Sex on both Depression, $F(1, 503) = .06, p = .80$, partial $\eta^2 = .000$, Self-esteem, $F(1, 503) = 2.53, p = .11$, partial $\eta^2 = .005$, and School Attitude, $F(1, 503) = .14, p = .71$, partial $\eta^2 = .000$.

Post-hoc independent samples t-tests conducted using a Bonferroni adjustment of $p = .013$ (i.e., $.05/4$) revealed late adolescent males reported lower stress levels than early adolescent males, $t(162) = 3.11, p = .002$. The opposite was demonstrated among females adolescents, with late adolescents endorsing more stress compared to early adolescents, $t(155.57) = -3.32, p = .001$. Early adolescent males and females did not significantly differ on their self-reports of stress, $t(181) = -.90, ns$, whilst late adolescent females indicated higher levels of stress relative to late adolescent males, $t(326) = 7.10, p < .001$.

The interactive effect derives from the differences in stress levels between late adolescent males and females, and suggests that the gender discrepancy in reported stress is wider for late than early adolescents. Late adolescent males reported the lowest levels of Stress and late adolescent females recounted the most Stress symptoms.

Table 7.5

Means and Standard Deviations for Stress for Sex According to Cohort for All Adolescents

Sex	Early Adolescents ($n = 183$)			Late Adolescents ($n = 328$)		
	(Males = 74, Females = 109)			(Males = 90, Females = 238)		
	n	M	SD	n	M	SD
Male	74	46.55	12.22	90	41.02	10.59
Female	109	44.76	13.98	238	49.66	9.52

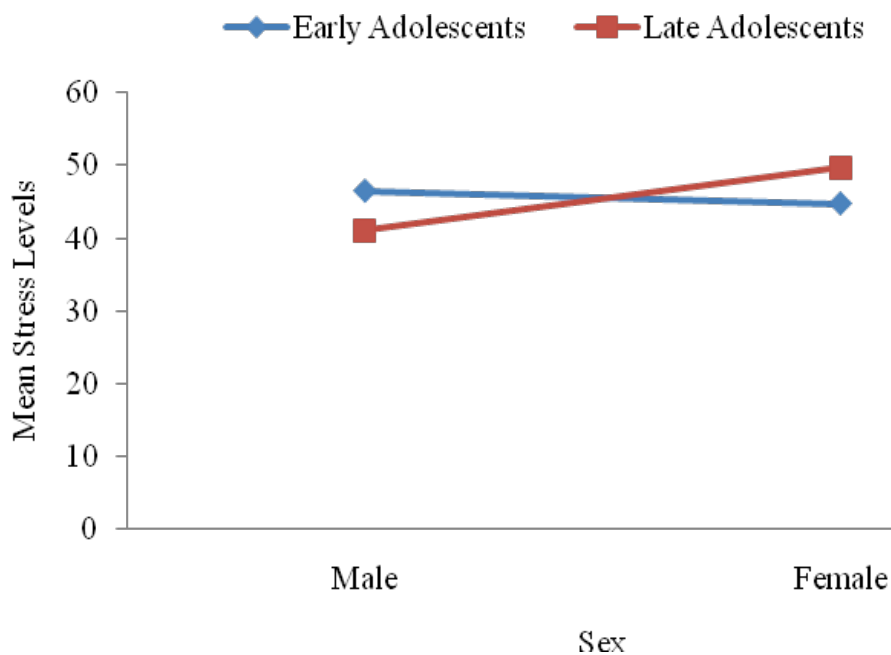


Figure 7.1. Mean Stress Levels for Sex According to Cohort for All Adolescents.

7.3.3 Intercorrelations between Demographics, Attachment Variables, and Adolescent Adjustment

Next, Pearson correlations were employed to explore the associations between demographics (Age, Sex, and Romantic Status) and (1) Attachment Strength (Mother, Father, Friend, and Romantic Partner), (2) Adolescent Adjustment (Depression, Self-esteem, Stress, and School Attitude), and (3) Attachment Model (Anxiety and Avoidance) to determine if the relationships were in the expected directions. Intercorrelations were conducted for the entire sample of adolescents surveyed ($N = 511$), with relationships established with Partner Strength reported only for the subset of romantically-involved adolescents ($n = 170$).

Two sets of intercorrelations are summarized separately here for clarity of presentation. The first set comprises the relationships between demographics and all the other variables, and the second set includes the intercorrelations between all the attachment variables and the indices of adolescent adjustment. All intercorrelations were interpreted according to the guidelines proposed by Cohen (1988) for small ($r < .3$), medium ($.3 > r < .5$) and large ($r > .5$) effect sizes.

7.3.3.1 Intercorrelations between Demographics and Attachment Strength, Adolescent Adjustment, and Attachment Model

Intercorrelations between the demographic variables and Attachment Strength, Adolescent Adjustment, and Attachment Model are presented in Table 7.6. Reflecting the demographics of this adolescent sample, significant small relationships were demonstrated between Age and both Sex and Romantic Status. Age was negatively related to Sex but positively associated with Romantic Status, indicating that older

adolescents were likely female, and currently involved in a romantic relationship respectively. No relationship between Sex and Romantic Status was found.

Both measures of parental attachment strength evinced weak and modest negative relationships with Age and Romantic Status respectively, with younger adolescents and the lack of romantic involvement associated with higher Mother Strength and Father Strength. Father Strength was also weakly and positively associated with Age. Partner Strength demonstrated higher positive correlations with Age than did Friend Strength, with the latter additionally demonstrating a small inverse relationship with Sex suggestive of higher attachment to friends among female adolescents. All relationships were as predicted in the attachment reorganization literature.

Intercorrelations between the demographics and Adolescent Adjustment revealed small significant relationships between Depression and Self-esteem with each of the demographic variables, apart from the non-significant relationship between Self-esteem and Romantic Status. As expected, Depression was positively associated with being older, female, and involved in a romantic relationship, whilst Self-esteem was positively linked with being younger and male. In turn, Stress demonstrated a weak inverse relationship with Sex only, suggesting that female adolescents reported more stress. School Attitude demonstrated weak inverse relationships with both Age and Romantic Status, but not with Sex despite similar strength of association.

Surprisingly, there were no significant intercorrelations between the demographic variables and Attachment Model with one exception. Sex evinced a small positive relationship with Avoidance, indicating that adolescent males endorsed greater avoidance in their attachment models.

Table 7.6

Intercorrelations Between Demographics, and Variables of Attachment Strength, Adolescent Adjustment, and Attachment Model

	Age	Sex	Romantic Status
Age	15.60 (2.15)	.	
Sex	-.09*	.32 (.47)	
Romantic Status	.21**	.004	.33 (47)
Mother Strength	-.36**	.02	-.20**
Father Strength	-.40**	.20**	-.18**
Friend Strength	.24**	-.21**	-.06
Partner Strength	.40**	-.09	--
Depression	.26**	-.15**	.12**
Self-esteem	-.29**	.15**	-.06
Stress	.06	-.19**	.07
School Attitude	-.10*	-.09	-.09*
Anxiety	.03	.08	.01
Avoidance	.06	.10*	-.06

Note. Means and standard deviations are presented on the diagonal.

* $p < .05$. ** $p < .01$.

7.3.3.2 Intercorrelations between Attachment Strength, Adolescent Adjustment, and Attachment Model

Correlations between the Attachment Strength, Adolescent Adjustment, and Attachment Model variables are presented in Table 7.7. Medium to large significant correlations were demonstrated between the four attachment figures. There was a significant negative relationship between Friend Strength and both measures of parental attachment strength, with higher levels of the former corresponding to lower levels of Mother Strength and Father Strength. For romantically-involved adolescents, there was an inverse significant association between Partner Strength and the other Attachment Strength measures. All relationships were in the expected directions consistent with attachment reorganization.

Intercorrelations between the different indices of Adolescent Adjustment revealed medium to large significant relationships. All relationships were in the theorized directions, with increases in Self-esteem and School Attitude negatively linked to Depression and Stress.

As expected, both parental measures of attachment strength were weakly but positively related to Self-esteem and School Attitude, and demonstrated small inverse relationships with Depression and Stress. These correlations suggest that higher levels of parental attachment were related to positive adolescent adjustment. In particular, Stress was more highly correlated with Father Strength than Mother Strength. Friend Strength has an inverse albeit weak relationship with Self-esteem and School Attitude, and showed small positive associations with Depression. There was no relationship between Friend Strength and Stress. Partner Strength similarly was weakly and negatively related to Self-esteem only, and did not evince any associations with the other adjustment variables. In contrast to parents, friends and romantic partners appear

to have negative and lesser associations with adolescent psychological health when examined within the context of the attachment hierarchy.

Also consistent with attachment theory, weak inverse correlations were demonstrated between global attachment models and parental attachment strength, with higher Mother Strength and Father Strength associated with lower Anxiety and Avoidance. There were, however, no relationships between attachment expectancies and either Friend Strength or Partner Strength.

Attachment models demonstrated medium to large significant relationships with all aspects of Adolescent Adjustment, with the exception of that between Avoidance and Stress. All intercorrelations were in the theorized directions with greater Anxiety and Avoidance positively associated with Depression and Stress, and negatively linked to Self-esteem and School Attitude. Between Anxiety and Avoidance, the former demonstrated stronger relationships with all the adjustment variables.

Table 7.7

Intercorrelations Between Adolescent Adjustment, Attachment Strength, and Attachment Model

	Mother Strength	Father Strength	Friend Strength	Partner Strength	Depression	Self-esteem	Stress	School Attitude	Anxiety	Avoidance
Mother Strength	1.23 (.98)	.48**	-.52**	-.33**	-.29**	.33**	-.09*	.23**	-.18**	-.13**
Father Strength		.59 (.69)	-.53**	-.35**	-.33**	.36**	-.21**	.21**	-.17**	-.10*
Friend Strength			1.66 (.92)	-.30**	.14**	-.13**	.08	-.10*	.05	-.05
Partner Strength				1.64 (1.10)	.15	-.23**	.09	-.10	.14	-.003
Depression					18.94 (6.40)	-.64**	.39**	-.46**	.54**	.36**
Self-esteem						50.24(10.96)	-.39**	.53**	-.59**	-.39**
Stress							46.64(11.62)	-.31**	.40**	.08
School Attitude								28.21 (3.99)	-.45**	-.32**
Anxiety									26.89 (7.48)	.39**
Avoidance										27.41 (6.73)

Note. Means and standard deviations are presented on the diagonal.

* $p < .05$. ** $p < .01$.

7.3.4 Attachment Variables and Adolescent Adjustment

Two sets of hierarchical multiple regressions (HMRs) were initially employed to determine the importance of attachment figures (Mother, Father, Friend, and Romantic Partner) for each of the four Adolescent Adjustment measures (Depression, Self-esteem, Stress, and School Attitude). Also investigated were the potential moderating effects of two demographic variables (Age and Sex) on Attachment Strength, and the contributions of Attachment Model (Anxiety and Avoidance) for adolescent wellbeing. The first set of HMRs were conducted for adolescents without romantic relationships ($n = 340$) relative to the attachment figures of mothers, fathers, and friends. The second set of HMRs were conducted specifically for romantically-involved adolescents ($n = 170$) regarding mothers, fathers, friends, and romantic partners as attachment targets. Demographic variables and Attachment Strength variables were mean-centered prior to analyses as recommended by Aiken and West (1991) when calculating interaction terms.

All independent variables were entered into the regression equation in a specific order, with hierarchical regression analyses comprising nine steps for romantically-uninvolved adolescents, and eleven steps for adolescents with romantic partners. Potential confounds of Sex and Age were controlled for as covariates, and entered in the first step for all regression equations. Next, attachment strength to each attachment figure was entered simultaneously in the second step. Following, interaction terms firstly with Age and then Sex were entered separately at each step in the HMR for each of the attachment figures in the order of Mother, Father, Friend, and Romantic Partner (if in a romantic relationship) to determine the significance of possible moderating effects. Finally, Anxiety and Avoidance were entered into the last step of the regression

equations to explore the additional relationships between attachment expectancies and adolescent adjustment.

The majority of assumptions required for a multiple regression analysis were met. The total sample sizes for adolescents not in romantic relationships ($n = 340$) and romantically-involved adolescents ($n = 170$) were sufficient for an analysis using thirteen and sixteen predictors respectively to test for a medium effect size with a power of .80 ($\alpha = .05$) (Green, 1991). Several multivariate outliers were identified using Mahalanobis distance. These multivariate outliers were retained given examinations using Cook's distance established their influences as smaller than 1.0, with standardized residuals between -3.0 and +3.9. Normality, linearity, and lack of homoscedasticity and collinearity were generally within acceptable limits as evidenced by residual scatter plots.

Standard multiple regressions (SMRs) were subsequently conducted and presented for hierarchical regression analyses which did not reveal significant interactions with either Age or Sex. Where significant interaction terms were found, another HMR was conducted including only those significant interaction terms, with each interaction term entered individually into the regression equation after the demographic variables in the first step, the Attachment Strength variables in the second step, and before Anxiety and Avoidance in the final step. In presenting the results, the findings are summarized according to each index of psychological health (Depression, Self-esteem, Stress, and School Attitude) being investigated for adolescents without romantic partners and romantically-involved adolescents separately.

7.3.4.1 Adolescents Not In a Romantic Relationship with Three Targets (Mother, Father, and Friend)

7.3.4.1.1 Depression

As the initial HMR performed revealed that none of the interactions with Age or Sex were significant, a SMR was instead conducted with Age, Sex, Attachment Strength (Mother, Father, and Friend), Anxiety and Avoidance as the predictor variables, and Depression as the dependent variable.

As seen from Table 7.8, the full model containing all the variables was significant, $F(7, 333) = 42.82, p < .001$, and explained 47.40% of the variance in Depression among adolescents without romantic relationships. Age, Sex, Anxiety and Avoidance attained significant beta weights such that being older, female, and higher in Anxiety and Avoidance was indicative of more Depression. Anxiety made the largest contribution to the variance in Depression.

Table 7.8

Summary of Standard Regression Analyses for Variables Predicting Depression Among Adolescents Not In a Romantic Relationship

	<i>B</i>	<i>SEB</i>	<i>B</i>	<i>R</i> ²
Age	.46	.13	.16***	
Sex	-1.87	.58	-.14**	
Mother Strength	-.14	.34	-.02	
Father Strength	-.62	.46	-.07	
Friend Strength	.69	.40	.10	
Anxiety	.41	.04	.50***	
Avoidance	.15	.04	.16***	.47***

** $p < .01$. *** $p < .001$.

7.3.4.1.2 Self-esteem

The initial HMR revealed that there were no significant interactions with the demographic variables in the prediction of Self-esteem. Thus, a SMR was performed with Age, Sex, Attachment Strength (Mother, Father, and Friend), Anxiety, and Avoidance as the independent variables, and Self-esteem as the dependent variable.

The full model containing all the variables explained 51.80% of the variance in Self-esteem among adolescents uninvolved in romantic relationships, and was significant, $F(7, 333) = 51.09, p < .001$ (see Table 7.9). Age, Sex, Anxiety and Avoidance attained significant beta weights where being younger, male, and lower in Anxiety and Avoidance was associated with higher Self-esteem. Anxiety made the largest contribution to the variance in Self-esteem, followed by Avoidance, Age, and Sex.

Table 7.9

Summary of Standard Regression Analyses for Variables Predicting Self-esteem Among Adolescents Not In a Romantic Relationship

	<i>B</i>	<i>SEB</i>	<i>B</i>	<i>R</i> ²
Age	-.80	.21	-.16***	
Sex	3.09	.98	.13**	
Mother Strength	.93	.57	.08	
Father Strength	1.18	.78	.08	
Friend Strength	-.62	.68	-.05	
Anxiety	-.74	.06	-.51***	
Avoidance	-.31	.07	-.19***	.52***

** $p < .01$. *** $p < .001$.

7.3.4.1.3 Stress

Given that none of the interactions with both demographic variables were significant in the prediction of Stress when an initial HMR was conducted, a SMR was instead performed with Age, Sex, Attachment Strength (Mother, Father, and Friend), Anxiety, and Avoidance as the predictor variables, and Stress as the dependent variable.

The full model comprising all variables was significant, $F(7, 333) = 15.39, p < .001$, and explained 24.40% of the total variance in Stress among adolescent not in romantic relationships (see Table 7.10). Sex, Father Strength, and Anxiety attained significant beta weights such that adolescents who were female, reported lower attachment strength to fathers, and higher levels of Anxiety were linked with higher levels of Stress.

Anxiety was the largest contributor to the variance in Stress.

Table 7.10

Summary of Standard Regression Analyses for Variables Predicting Stress Among Adolescents Not In a Romantic Relationship

	<i>B</i>	<i>SEB</i>	<i>B</i>	<i>R</i> ²
Age	.16	.28	.03	
Sex	-3.18	1.31	-.12*	
Mother Strength	1.35	.77	.11	
Father Strength	-2.39	1.05	-.14*	
Friend Strength	.28	.91	.02	
Anxiety	.72	.08	.47***	
Avoidance	-.12	.18	-.07	.24***

* $p < .05$. *** $p < .001$.

7.3.4.1.4 School Attitude

The HMR conducted previously demonstrated a significant interaction between Sex and Friend Strength in the prediction of School Attitude. Thus, another HMR was conducted with the demographic variables (Age and Sex) entered in the first step, Attachment Strength (Mother, Father, and Friend) in the second step, the interaction term between Sex and Friend Strength in the third step, and Anxiety and Avoidance in the final step.

In step one, Age and Sex explained 2.30% of the variance in School Attitude, and the overall model was significant, $F(2, 338) = 3.91, p = .021$. As seen in Table 7.11, Sex attained a significant beta coefficient, with the female gender associated with more positive School Attitude.

The model for step two was also significant, $F(5, 335) = 6.49, p < .001$, and explained an additional 6.60% of the variance in School Attitude. Sex retained its significance in the second step while Mother Strength and Father Strength achieved significant beta coefficients. Father Strength made the largest contribution followed by Mother Strength, then Sex.

Step three included the interaction between Sex and Friend Strength, and the third model was significant, $F(6, 334) = 5.52, p < .001$. Father Strength, Mother Strength, and Sex retained their significance in model three, with the amount of contributions made in descending order. Unlike the initial HMR conducted, the interaction term was not significant in step three, and added a non-significant percentage of predicted variance in Depression.

The fourth model was significant, $F(8, 332) = 16.10, p < .001$, with the fourth step contributing a further 18.90% of explained variance in School Attitude. Anxiety and Avoidance attained significant beta weights whilst the previous three variables lost their significance. Anxiety was a larger predictor of School Attitude than Avoidance.

Table 7.11

*Summary of Hierarchical Regression Analyses for Variables Predicting School Attitude
Among Adolescents Not In a Romantic Relationship*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	-.21	.11	-.10		
Sex	-1.00	.51	-.11*	.02*	.02*
Step 2					
Age	.01	.11	.002		
Sex	-1.15	.52	-.12*		
Mother Strength	.71	.30	.16*		
Father Strength	1.15	.41	.19**		
Friend Strength	.16	.35	.04	.09***	.07***
Step 3					
Age	.01	.11	.003		
Sex	-1.18	.52	-.13*		
Mother Strength	.74	.30	.17*		
Father Strength	1.15	.41	.19**		
Friend Strength	.12	.35	.03		
Sex* Friend Strength	-.44	.52	-.05	.09***	.002
Step 4					
Age	-.01	.10	-.01		
Sex	-.70	.47	-.08		
Mother Strength	.37	.27	.09		
Father Strength	.58	.37	.10		
Friend Strength	-.16	.33	-.03		
Sex* Friend Strength	-.47	.47	-.05		
Anxiety	-.19	.03	-.34***		
Avoidance	-.12	.03	-.19**	.28***	.19***

* $p < .05$. ** $p < .01$. *** $p < .001$.

7.3.4.2 Adolescents In a Romantic Relationship with Four Targets (Mother, Father, Friend, and Romantic Partner)

7.3.4.2.1 Depression

Only the interaction between Age and Friend Strength was revealed to significantly predict Depression in the initial HMR conducted. A second HMR was performed with the demographic variables (Age and Sex) entered in the first step, Attachment Strength (Mother, Father, Friend, and Romantic Partner) in the second step, the interaction term between Age and Friend Strength in the third step, and Anxiety and Avoidance in the fourth step.

Step one found Age and Sex to predict 8.10% of the variance in Depression, and that the overall model was significant, $F(2, 167) = 7.39, p = .001$. Sex achieved a significant beta coefficient revealing that being female was suggestive of higher levels of Depression (see Table 7.12).

The second step was also significant, $F(6, 163) = 4.26, p = .001$, and explained an additional 5.40% of the variance in Depression. Sex continued to be a significant predictor whilst Mother Strength achieved a significant beta coefficient in model two. Both Sex and Mother Strength contributed equally to the prediction of Depression.

Model three was significant, $F(7, 162) = 4.53, p < .001$, with step three containing the interaction between Age and Friend Strength. Mother Strength and Sex retained their significance, with the interaction term attaining a significant beta coefficient in the third model. Its addition in step three contributed a further 2.80% of predicted variance in Depression. Mother Strength was the largest contributor, followed jointly by Sex and the interaction term.

The fourth step predicted a further 18.8% of the total variance in Depression, with model four also significant, $F(9, 160) = 9.63, p < .001$. Both the interaction term and Sex retained their significance, with Anxiety and Avoidance achieving significant beta coefficients in the fourth model. Anxiety made the largest contribution among the four variables.

Table 7.12

*Summary of Hierarchical Regression Analyses for Variables Predicting Depression
Among Adolescents In a Romantic Relationship*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	.38	.27	.11		
Sex	-2.90	1.06	-.22**	.08**	.08**
Step 2					
Age	-.05	.31	-.01		
Sex	-2.59	1.08	-.20*		
Mother Strength	-1.44	.68	-.20*		
Father Strength	-1.59	1.09	-.15		
Friend Strength	-.50	.76	-.07		
Partner Strength	-.02	.58	-.003	.14**	.05*
Step 3					
Age	.11	.31	.03		
Sex	-2.53	1.07	-.19*		
Mother Strength	-1.46	.67	-.21*		
Father Strength	-2.13	1.10	-.20		
Friend Strength	-1.03	.78	-.15		
Partner Strength	-.06	.57	-.01		
Age* Friend Strength	.66	.28	.19*	.16***	.03*
Step 4					
Age	.30	.28	.09		
Sex	-3.09	.95	-.24**		
Mother Strength	-.76	.60	-.11		
Father Strength	-1.20	.98	-.11		
Friend Strength	-.69	.70	-.10		
Partner Strength	-.04	.52	-.01		
Age* Friend Strength	.57	.25	.16*		
Anxiety	.30	.07	.32***		
Avoidance	.22	.07	.23**	.35***	.19***

* $p < .05$. ** $p < .01$. *** $p < .001$.

The interaction between Age and Friend Strength is depicted in Figure 7.2. At lower levels of attachment strength to friends (i.e., 1 *SD* below the mean), younger and older romantically-involved adolescents reported an increase and a decrease in Depression respectively. The moderating effect of Age was reversed at higher levels of Friend Strength (i.e., 1 *SD* above the mean), with older adolescents endorsing more symptoms of depression, and younger adolescents reporting less depression. The moderating effect of Age on the relationship between Friend Strength and Depression appears greater at higher levels of attachment than at lower levels of attachment.

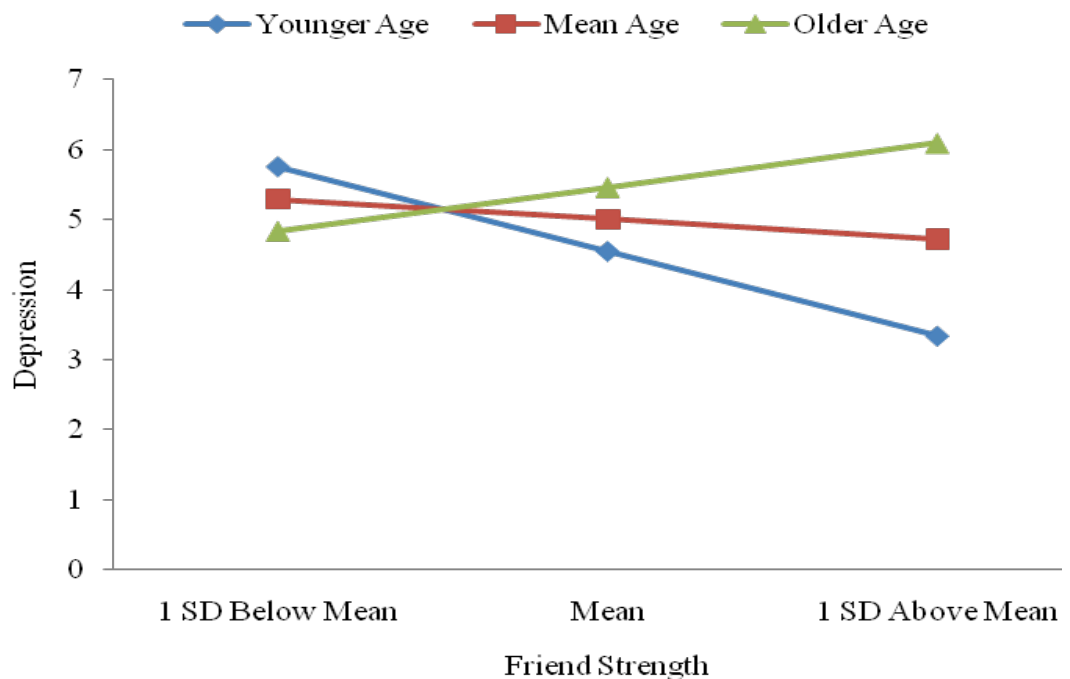


Figure 7.2. Two-way Interaction between Friend Strength (Predictor) and Age (Moderator) in Predicting Depression among Adolescents In a Romantic Relationship.

7.3.4.2.2 Self-esteem

The initial HMR revealed a significant Age by Father Strength interaction in the prediction of Self-esteem among adolescents with romantic relationships. A subsequent HMR was conducted with the demographic variables (Age and Sex) entered in step one, Attachment Strength (Mother, Father, Friend, and Romantic Partner) entered in step two, the interaction between Age and Father Strength in the third step, and Anxiety and Avoidance in step four.

The demographics variables explained 15.0% of the variance in Self-esteem, and the overall model was significant, $F(2, 167) = 14.71, p < .001$, in step one. Both Age and Sex attained significant beta coefficients, indicating that both younger age and the male gender were linked to greater Self-esteem. Age was the bigger contributor between the two variables as seen from Table 7.13.

Step two was also significant, $F(6, 163) = 8.03, p < .001$, with the second model explaining an additional 7.80% of the variance in Self-esteem. Sex retained its significance in the second model, and Mother Strength and Father Strength attained significant beta coefficients. Father Strength explained the most variance, and marginally more than Mother Strength and Sex which both contributed equally to Self-esteem.

Step three comprised the interaction between Age and Father Strength, with the interaction term explaining a further non-significant percentage of variance in Self-esteem. The third model was, however, still significant, $F(7, 162) = 7.45, p < .001$. Mother Strength, Sex, and Father Strength retained their significance in the third model, with the latter two jointly predicting slightly more than the former. The interaction term was not a significant predictor of Self-esteem unlike in the HMR conducted previously.

The fourth model was also significant, $F(9, 160) = 15.93, p < .001$, and accounted for a further 22.90% of the predicted variance in Self-esteem. Only Sex retained its significance in the fourth step whilst Age, Anxiety, and Avoidance achieved significant beta coefficients. The relative contributions made by Anxiety, Sex, Age and Avoidance to the variance in Self-esteem were in descending order.

Table 7.13

*Summary of Hierarchical Regression Analyses for Variables Predicting Self-esteem
Among Adolescents In a Romantic Relationship*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	-1.38	.43	-.25**		
Sex	4.59	1.67	.21**	.15***	.15***
Step 2					
Age	-.47	.48	-.09		
Sex	3.79	1.67	.18*		
Mother Strength	2.10	1.05	.18*		
Father Strength	3.46	1.68	.20*		
Friend Strength	.30	1.17	.03		
Partner Strength	-.42	.90	-.05	.23***	.08**
Step 3					
Age	-.50	.48	-.09		
Sex	4.29	1.68	.20*		
Mother Strength	2.26	1.04	.19*		
Father Strength	3.51	1.67	.20*		
Friend Strength	.24	1.17	.02		
Partner Strength	-.47	.89	-.05		
Age* Father Strength	1.20	.66	.13	.24***	.02
Step 4					
Age	-.91	.41	-.17*		
Sex	5.27	1.42	.25***		
Mother Strength	1.01	.89	.09		
Father Strength	1.92	1.41	.11		
Friend Strength	-.06	.99	-.01		
Partner Strength	-.27	.76	-.03		
Age* Father Strength	.64	.56	.07		
Anxiety	-.64	.10	-.43***		
Avoidance	-.26	.10	-.16*	.47***	.23***

* $p < .05$. ** $p < .01$. *** $p < .001$.

7.3.4.2.3 Stress

The HMR conducted previously revealed a significant interaction between Age and Partner Strength in the prediction of Stress. Thus, a second HMR was conducted with the demographic variables (Age and Sex) entered in the first step, Attachment Strength (Mother, Father, Friend, and Romantic Partner) in step two, the interaction between Age and Partner Strength in step three, and Anxiety and Avoidance in the fourth step.

In the first step, Age and Sex explained 11.30% of the variance in Stress, and the overall model was significant, $F(2, 167) = 10.66, p < .001$. Only Sex attained a significant beta coefficient, indicating that females were more likely to endorse Stress symptoms (see Table 7.14).

Model two was significant, $F(6, 163) = 5.11, p < .001$, although the second step itself was not significant and accounted for a non-significant percentage of variance in Stress. Sex maintained its significance in the second model while Age achieved a significant beta coefficient. Sex was a stronger predictor compared to Age.

Model three was significant as well, $F(7, 162) = 5.46, p < .001$, with the third step containing the interaction between Age and Partner Strength. Whilst Age and Sex retained their significance, Partner Strength and the interaction term attained significant beta coefficients in the third model. The interaction term was a significant predictor, and contributed further significant 3.20% of variance in Stress. Age was the largest contributor among the four predictors.

Step four was also significant, $F(9, 160) = 7.38, p < .001$, and explained an additional 10.20% of predicted variance in Stress. Age, Sex, and the interaction term retained their significance in the fourth model, with Anxiety also achieving a significant beta coefficient. Anxiety made the largest contribution, followed by Sex, Age, and finally, the interaction term.

Table 7.14

Summary of Hierarchical Regression Analyses for Variables Predicting Stress Among Adolescents In a Romantic Relationship

	<i>B</i>	<i>SEB</i>	β	<i>R</i> ²	<i>R</i> ² Change
Step 1					
Age	-.79	.45	-.14		
Sex	-8.12	1.76	-.37***	.11***	.11***
Step 2					
Age	-1.43	.52	-.25**		
Sex	-7.46	1.79	-.34***		
Mother Strength	-1.03	1.12	-.09		
Father Strength	-.36	1.80	-.02		
Friend Strength	1.53	1.26	.13		
Partner Strength	1.50	.97	.16	.16***	.05
Step 3					
Age	-1.83	.53	-.32**		
Sex	-6.42	1.81	-.29**		
Mother Strength	-.87	1.11	-.07		
Father Strength	.02	1.78	.001		
Friend Strength	1.60	1.24	.14		
Partner Strength	2.23	.99	.24*		
Age* Partner Strength	-1.06	.42	-.21*	.19***	.03*
Step 4					
Age	-1.56	.51	-.27**		
Sex	-7.33	1.71	-.33***		
Mother Strength	-.40	1.06	-.03		
Father Strength	.88	1.69	.05		
Friend Strength	1.45	1.18	.12		
Partner Strength	1.84	.94	.20		
Age* Partner Strength	-1.20	.39	-.24**		
Anxiety	.55	.12	.36***		
Avoidance	-.15	.12	-.09	.29***	.10***

* $p < .05$. ** $p < .01$. *** $p < .001$.

As illustrated in Figure 7.3, the moderating effect of Age on Partner Strength revealed that among romantically-involved adolescents who demonstrated higher attachment strength to romantic partners (i.e., 1 *SD* above the mean), younger adolescents reported increased Stress whilst older adolescents reported a decrease in stress symptoms. Younger and older adolescents did not differ in levels of Stress when they reported lower attachment strength to romantic partners (i.e., 1 *SD* below the mean).

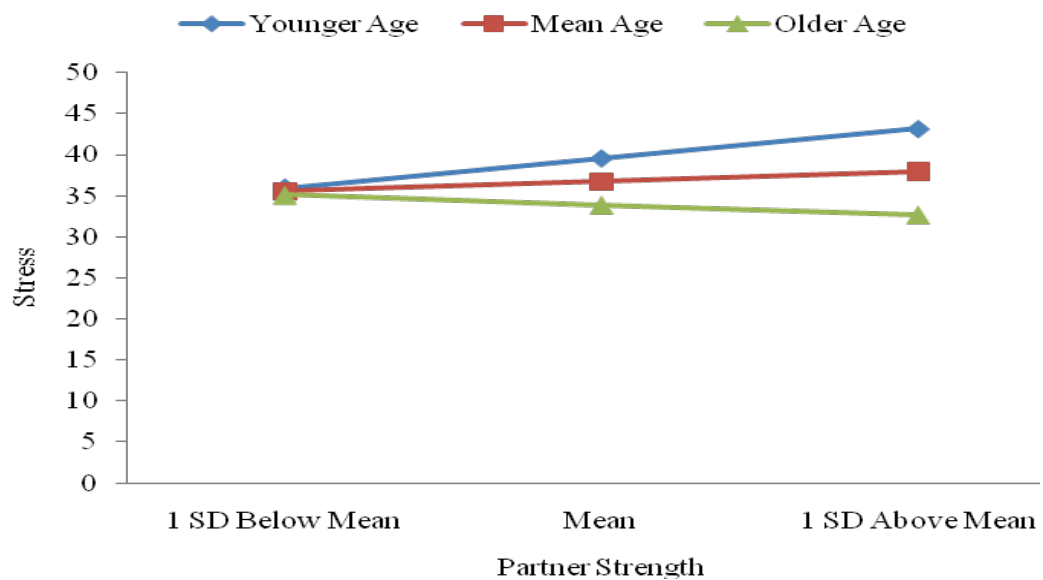


Figure 7.3. Two-way Interaction between Partner Strength (Predictor) and Age (Moderator) in Predicting Stress among Adolescents In a Romantic Relationship.

7.3.4.2.4 School Attitude

As none of the interaction terms with the demographic variables were significant in the initial HMR conducted, a SMR was instead conducted with Age, Sex, Attachment Strength (Mother, Father, Friend, and Romantic Partner), Anxiety and Avoidance as the independent predictors, and School Attitude as the dependent variable.

As indicated in Table 7.15, the full model comprising all the variables explained 20.10% of the total variance in School Attitude among adolescents with romantic relationship, and was significant, $F(8, 161) = 5.06, p < .001$. Only Anxiety achieved a significant beta coefficient such that romantically-involved adolescents with lower levels of Anxiety endorsed more positive School Attitude.

Table 7.15

Summary of Standard Regression Analyses for Variables Predicting School Attitude Among Adolescents In a Romantic Relationship

	<i>B</i>	<i>SEB</i>	<i>B</i>	<i>R</i> ²
Age	.10	.15	.06	
Sex	.08	.51	.01	
Mother Strength	.19	.32	.06	
Father Strength	.01	.51	.002	
Friend Strength	-.09	.36	-.03	
Partner Strength	-.16	.27	-.06	
Anxiety	-.17	.04	-.38***	
Avoidance	-.04	.04	-.09	.20***

*** $p < .001$.

7.3.4.3 Overall Summary

Only attachment strength to fathers was found to uniquely predict adolescent adjustment, specifically Stress, within the context of the attachment network once the associations with demographic variables and attachment expectancies were accounted for. The demographic variables of Sex and Age accounted for a significant proportion

of the variance in all variables of adolescent adjustment apart from School Attitude for all adolescents. Sex additionally uniquely predicted Stress among adolescents without romantic relationships and Depression among romantically-involved adolescents. Moderating effects of Age on Friend Strength and Partner Strength were evinced for Depression and Stress respectively for adolescents in romantic relationships. There was no moderating effect of Sex on any of the different attachment relationships for any index of adolescent wellbeing. Global attachment models were found to predict adolescent adjustment beyond the relationships with both demographic and attachment strength variables. Anxiety was the biggest contributor to adolescent adjustment and significantly predicted all the psychological health variables. By comparison, Avoidance did not uniquely explain the variance in Stress for all adolescents, and School Attitude among adolescents with romantic partners.

7.4 Discussion

7.4.1 Overview

The present study set out to investigate the relationships between adolescent adjustment and attachment strength to different targets during attachment reorganization, and to additionally account for the importance of attachment models for adolescent psychological wellbeing. Researchers have recognized the developmental significance of attachment relationships for adolescent adjustment, but have primarily focused on identifying the influences of different attachment relationships independently, rather than collectively as an attachment network (Wilkinson, 2006b; Wilkinson & Kraljevic, 2004). Attachment expectancies have also been found to contribute uniquely to psychological wellbeing independent of the effects of different

attachment relationships on adolescent adjustment (Klohnen et al., 2005; Zhang et al., 2011). Investigating both general and relationship-specific attachment to different attachment figures would clarify the relative contributions of parents and peers towards adolescent adjustment (Pitman & Scharfe, 2010; Ridenour et al., 2006), as the structure and composition of the adolescent attachment hierarchy changes throughout adolescence (Rosenthal & Kobak, 2010).

Findings from the current study indicated that the relationships between different attachment figures and adolescent psychological health were more subtle and complicated by several factors, whereas global attachment models were highly predictive of adolescent adjustment across multiple indices. Although normative attachment to mothers and fathers initially explained some variance in adolescent adjustment, only attachment strength to fathers was directly predictive of Stress among adolescents without romantic relationships. Age was found to moderate the relationships between attachment to friends and Depression, and between attachment to romantic partners and Stress, among romantically-involved adolescents. There were no moderating effects of Sex for any of the adolescent adjustment variables investigated. Overall, Anxiety was the largest predictor of adolescent adjustment, with Avoidance also contributing to all indices except for Stress among all adolescents, and School Attitude among adolescents in romantic relationships.

7.4.2 Attachment Relationships

The first hypothesis that attachment strength to different relationship figures would be associated with adolescent adjustment received some preliminary support. Prior to introducing attachment expectancies into the regression equations, mothers and fathers were predictive of Self-esteem and School Attitude for adolescents with and without

romantic relationships respectively, with the former also linked to Depression among romantically-involved adolescents. In turn, romantic partners initially predicted Stress for adolescents with romantic relationships but friends were not related to any aspect of adolescent adjustment. Only attachment strength to fathers directly contributed to Stress among romantically-uninvolved adolescents after accounting for global attachment models. Overall, attachment figures did not consistently predict adolescent adjustment with the extent of association not necessarily corresponding to the amount of attachment strength reported as would be expected by attachment theory.

The finding that only fathers were directly related to adolescent adjustment, namely Stress, is interesting as fathers are generally the least used attachment figure for all attachment functions, regardless of age, gender, or romantic involvement (Freeman & Brown, 2001; Markiewicz et al., 2006). That said, adolescents who did not use their fathers as an attachment figure were previously found at greater risk of both internalizing and externalizing behaviors (Rosenthal & Kobak, 2010). As a parental attachment figure, fathers are postulated to facilitate independence, the ability to regulate overwhelming emotions in times of stress, and to cope with overstimulation (Hazen et al., 2010; McCormick & Kennedy, 1994). Fathers are also argued to have more impact on adolescent wellbeing than mothers (Allen et al., 1994) particularly in the areas of social functioning (Rice et al., 1997; Suess et al., 1992), emotional socialization (Lamb, 1977; 2002), and school-related behavioral problems (Williams & Kelly, 2005).

Consequently, the importance of fathers in predicting Stress is likely reflective of the challenges that adolescents experience during this period of profound transformations, including the developmental tasks of individuating from parents, establishing peer relationships characterized by the capacity for adult-like intimacy and supportiveness, and developing sexual and romantic relationships (Allen & Land, 1999; Hartup, 1992,

1996; Seiffge-Krenke, 2003). These developmental changes can be stressful for many adolescents (Ge, Conger, & Elder, 2001; Howard & Medway, 2004). This may also explain why fathers were not predictive of Stress among romantically-involved adolescents, that is, adolescents with romantic partners may have already successfully navigated these same developmental tasks.

All attachment figures, except friends, were initially predictive of at least one variable of adolescent wellbeing before the contributions of attachment working models were accounted for. While aligning with studies indicating that various attachment figures are differentially linked with adolescent adjustment (e.g., Goh & Wilkinson, 2007; Mayseless, 2004; Rosenthal & Kobak, 2010; Zhang et al., 2011), these findings differ in that friends were not related to any aspect of adolescent adjustment despite adolescents reporting using them most for attachment functions. It has been suggested that the utility of friends for support-seeking and affiliative functions support the formation of attachment bonds with friends, and are not problematic for adolescent adjustment (Rosenthal & Kobak, 2010). Friendships are characterized by proximity-seeking and safe haven functions but not by separation distress or enduring commitment (Furman, 2001), and may function as ad-hoc attachment figures for Safe Haven and Secure Base without becoming a primary or secondary attachment figure (Ainsworth, 1989; Waters & Cummings, 2000). It may be that friends in this study function as ad-hoc attachment figures whilst providing support-seeking and affiliative functions, and hence have limited contributions to adolescent adjustment (Rosenthal & Kobak, 2010; Waters & Cummings, 2000) despite being used most for attachment functions.

7.4.3 Age Differences

Partial support was generated for the hypotheses regarding age effects on the relationships between attachment figures and adolescent psychological health. Whereas no moderating effects of Age on adjustment were demonstrated for all adolescents relative to mothers and fathers as attachment figures, Age was found to moderate the relationships between attachment strength to friends and Depression and between attachment strength to romantic partners and Stress for romantically-involved adolescents only. In line with hypotheses, higher attachment strength to romantic partners was indicative of lower stress among older adolescents while being more disadvantageous for younger adolescents with romantic partners. However contrary to predictions, greater attachment to friends predicted higher depression among older adolescents involved in romantic relationships whilst buffering the effects of depression among romantically-involved younger adolescents.

Mothers and Fathers as Attachment Figures

A key developmental task in adolescence is the establishment of autonomy and decreased reliance on parents as attachment figures (Allen, 2008; Allen & Land, 1999). This task involves adolescents becoming less dependent on parents in various ways, rather than the attachment relationship with parents becoming unimportant overall (Buhrmester, 1992; Larson et al., 1996). Advancing cognitive abilities allow adolescents to internalize expectations of parents' availability even as attachment behaviors are increasingly directed towards peers (Bowlby, 1969/1982; Scharf & Mayselless, 2007). A decline in utility, but not in perceptions of availability, of parents for attachment needs is considered normative (Bowlby, 1977; Kerns et al., 2006;

Lieberman et al., 1999; Paterson et al., 1994) as adolescents individuate from their parents.

Age may therefore fail to moderate the relationship between attachment strength to parents and adolescent adjustment because adolescents continue to be assured of their parents' commitment to them as attachment figures although attachment behaviors are likely directed towards parents only in stressful or emergency situations (Kobak et al., 2007; Steinberg, 1990). Parents remain a major source of support for adolescents even as the salience of peers increase (Youniss & Smollar, 1985), and despite romantic involvement (Markiewicz et al., 2006). Accordingly, parents, especially mothers, continue to be important members of adolescents' attachment hierarchies, and are still used as attachment figures even in young adulthood (Fraley & Davis, 1997; Trinke & Bartholomew, 1997).

Friends as Attachment Figures

Age was found to moderate the relationship between Friend Strength and Depression among romantically-involved adolescents. At lower levels of reported attachment to friends, older adolescents evidenced less depression whereas younger adolescents identified more symptoms of depression.

Research has previously indicated that the development and maintenance of romantic relationships in adolescence are strongly influenced by the peer group, with romantic relationships primarily engaged in to develop identity and self-concept, and to increase belonging and status with peers (Zimmer-Gembeck et al., 2001). For older adolescents with lower attachment to friends, the presence of a romantic relationship could serve to increase feelings of social acceptance and attractiveness to potential romantic partners (Douvan & Adelson, 1966; Zimmer-Gembeck et al., 2001), resulting in lower levels of depression. Unpopular youth may also depend more on their romantic partners to

compensate for the lack of acceptance by their same-sex peer group (Bukowski, Sippola, & Hoza, 1999). Adolescent romantic relationships are similar to close friendships in that both involve support, intimacy, and companionship (Feiring, 1996; Furman & Wehner, 1994; Laursen, 1996). Older adolescents who demonstrate lower attachment strength to friends may report less depressive symptoms as their attachment needs are otherwise being fulfilled by their romantic partners.

Conversely, romantically-involved early adolescents unpopular among same-sex friends were found to demonstrate poorer emotional and behavioral adjustment (Brendgen et al., 2002). Having a romantic relationship is considered atypical in the early years of adolescence (Carver et al., 2003; Feiring, 1996), and can be predictive of depression if it is viewed as non-normative behavior compared to the rest of the friendship group. Adolescents with poor peer relationships are postulated to likely lack the mastery and competence necessary to establish successful romantic relationships (Buhrmester & Furman, 1986; Sullivan, 1953). Younger adolescents who report lower attachment to friends are potentially more prone to depression as they not only lack the skills required for positive social interactions (Asher & Coie, 1990), but are also more likely to reenact these negative interaction patterns in their romantic relationships (Brendgen et al., 2002).

The moderating effect of age was more pronounced at higher levels of attachment to friends. Age effects were reversed with higher attachment strength to friends linked with elevated levels of depression among older adolescents, but to less depression among younger adolescents.

Adolescents' feelings of depression have previously been associated with less social participation and more interpersonal difficulties (Mufson, Weissman, Moreau, & Garfinkel, 1999). While issues of romantic relationships may serve to bond younger adolescents, they could promote rivalry and jealousy among older adolescents,

especially if having a romantic partner is tied to status and rivalry within the peer group itself (Eder, 1993; Nieder & Seiffge-Krenke, 2001). Romantic involvement in older adolescence may place strain on existing friendships wherein jealousy or resentment incited from spending less time with close friends (Roth & Parker, 2001) results in conflict or social exclusion that heighten the older adolescent's feelings of discomfort or distress (La Greca & Harrison, 2005; La Greca & Mackey, 2007; Montemayor & Van Komen, 1985). Likewise, romantic partners may resent the amount of time older adolescents spend with their friends, leading to conflict between the couple, and the creation of "romantic stress" previously found to mediate the relationship between romantic involvement and depressive symptoms (Davila et al., 2004; La Greca & Harrison, 2005). These issues are likely more prevalent for older adolescents who are strongly attached to friends, thereby leading to reports of higher depression.

By contrast, romantic involvement in younger adolescence may enhance feelings of closeness with friends by eliciting discussions and advice-seeking on romance and sexuality (Furman & Buhrmester, 1992; Scharf & Mayseless, 2007; Seiffge-Krenke, 1995; Simon, Eder, & Evans, 1992). Moreover, romantic activities in early adolescence are generally incorporated into pre-existing peer activities as part of the adolescent's overall social interaction (Connolly et al., 2004). Younger adolescents reporting higher attachment strength to friends are likely able to balance their romantic relationships and friendships, allowing them to continue having their attachment needs met by friends and also benefitting from having close friends with whom they can discuss romantic issues (Zimmer-Gembeck, 2002).

Romantic Partners as Attachment Figures

Age was also found to moderate the relationship between attachment strength to romantic partners and Stress. Younger adolescents reporting higher attachment strength

to romantic partners endorsed more stress symptoms whilst older adolescents with higher attachment to romantic partners reported less stress. However, similar stress levels were demonstrated between younger and older adolescents who reported lower attachment strength to romantic partners.

Falling in love is seen as a moderately stressful event particularly by younger adolescents (Seiffge-Krenke, 1995), with romantic relationships in early adolescence associated with pressures of having the “right kinds” of romantic relationships with the “right persons” (Nieder & Seiffge-Krenke, 2001). As romantic relationships in the early years of adolescence are largely experimental and casual (Dowdy & Kliever, 1998), adolescents reporting greater partner attachment may find their romantic partners unable to provide the desired social provisions (Furman & Wehner, 1994), which itself can be stress-provoking. Younger adolescents likely have less experience in romantic relationships, and stress in romantic relationships may be particularly taxing on adolescents’ emotional and cognitive resources (Margolese et al., 2005) because they may not have yet developed the coping skills required for actively dealing with stress in their romantic relationships (Nieder & Seiffge-Krenke, 2001).

Alternatively, romantic relationships in later adolescence are increasingly characterized by care and commitment (Shulman & Kipnis, 2001) as adolescents acquire more experiences with romantic partners, and become more comfortable using them for attachment needs (Furman & Wehner, 1997). Expectations that romantic partners will be sought out in times of distress, and will provide support, comfort, and caregiving become normative in later adolescence (Furman & Wehner, 1994). Older adolescents are also likely more competent in actively coping with stresses in their romantic relationships (Nieder & Seiffge-Krenke, 2001). Consequently, late adolescents with higher partner attachment may report less stress as they are both more confident of their romantic partner’s abilities to fulfill attachment needs (Shulman & Scharf, 2000),

and better equipped to deal with potential stressors in their romantic relationships (Neider & Seiffge-Krenke, 2001).

In turn, previous research has suggested that romantic partners complement rather than displace existing attachment figures (Goh & Wilkinson, 2007; Wilkinson, 2006b), and become increasingly important attachment targets through time, experience, and fulfilling various needs (Connolly & Johnson, 1996; Furman & Buhrmester, 1992). This process approximates two years before romantic relationships evolve into full attachment relationships that provide all four attachment functions (Fraley & Davis, 1997; Hazan & Zeifman, 1994). Age may therefore not differentially affect the stress levels of younger and older adolescents reporting less attachment to romantic partners as these romantically-involved adolescents might instead be relying more on other members of their attachment network for support when stressed (Freeman & Brown, 2001; Laursen & Williams, 1997; Neider & Seiffge-Krenke, 2001).

7.4.4 Gender Differences

Contrary to predictions, there were no moderating effects of Sex on any of the different attachment relationships. None of the interactions between Attachment Strength and Sex significantly predicted any index of adolescent adjustment even before the influences of global attachment models were accounted for.

Mothers and Fathers as Attachment Figures

Whereas previous studies have demonstrated a 'sex allegiance' effect for adolescent psychological health (e.g., Rice et al., 1997; Wilkinson, 2006b), there was no current evidence indicating that same-sex parental support is more salient for adolescents than opposite-sex parental support (Colarossi, 2001; Cornwell, 2003). Adolescent males

relative to females were found to report higher attachment to fathers in this research, yet this did not translate into fathers having more associations with the former's wellbeing. The failure to establish a 'sex allegiance' effect may pertain to the role performed by fathers and the extent to which they are used as attachment figures. Fathers purportedly play a supportive role to mothers that stresses instrumental-oriented caregiving (Freeman et al., 2010; Richards et al., 1991), and are the providers of felt security and physical protection that might not be as readily reflected by adolescents' wellbeing in the absence of dire threat (Freeman & Almond, 2010). In general, all adolescents chose fathers least as attachment targets whilst mothers remained an important attachment figure regardless of age, gender, or current romantic status (Freeman & Brown, 2001; Margolese et al., 2005; Markiewicz et al., 2006). This could also explain the lack of differential gender effects regarding mothers for adolescent adjustment given that both sexes reported using her similarly for attachment functions in this study. Furthermore, previous studies (e.g., Lieberman et al., 1999; Paterson et al., 1994; Wilkinson, 2006b) demonstrating the 'sex allegiance' effect measured the quality of parental attachment, which comprises a related but theoretically distinct concept of attachment (Armsden & Greenberg, 1987; Heiss et al., 1996; Parkes & Stevenson-Hinde, 1982) from that of attachment strength used in the current study.

Alternatively, research has indicated that although gender socialization intensifies during early adolescence, the influence of the same-sex parent begins to decrease by middle to late adolescence as adolescents start to individuate from their parents (Buist et al., 2002; Erikson, 1968). This period of 'deidealization' is necessary for adolescents to decentralize their attachment needs and invest in extrafamilial relationships (Scharf & Maysel, 2007). Maintaining the availability of the parental attachment figure is postulated to remain the set goal of the attachment system (Bowlby, 1973) even as a decline in the frequency and intensity of specific attachment behaviors towards parents

is demonstrated (Bowlby, 1969/1982). Given that adolescent autonomy is most easily established within the context of a supportive relationship with parents (Allen et al., 1994; Allen & Land, 1999; Collins, 1990), adolescents may continue reporting warm and supportive relationships with their parents, and to experience positive wellbeing, even while the influence of the same-sex parent wanes during this process of deidealization. This might be the case for the adolescents sampled in this study, given that more late adolescents than early adolescents were recruited.

Friends as Attachment Figures

Similarly, there was no moderating effect of sex on the relationships between attachment strength to peers and adolescent adjustment. This finding is inconsistent with previous research that found higher attachment strength to friends to be associated with more internalizing symptoms particularly for female adolescents (e.g., Rosenthal & Kobak, 2010). One plausible explanation argues that friendships are equally important for both male and female adolescents (Cross & Madson, 1997) but are expressed in different ways. Adolescent males demonstrate intimacy in friendships through participation in shared activities in large groups (Buhrmester & Furman, 1987; Camarena et al., 1990), whereas adolescent females engage greater self-disclosure and commitment in their friendships (Branje et al., 2007). Adolescent males and females may also be on different developmental trajectories regarding their perceptions of important qualities for close relationships (Connolly & Johnson, 1996; Feiring, 1996). Thus, while adolescent females report higher attachment to friends than do adolescent males as indexed by attachment strength, this may not directly translate into friends being more important for the wellbeing of females compared to males.

Another possibility for the failure to demonstrate gender effects relative to friends is that all adolescents may be relying on friends as ad hoc attachment figures (Waters &

Cumming, 2000). Whereas reliance on friends as primary, secondary, or tertiary attachment figures was associated with increases in internalizing and externalizing behaviors, relying on friends for support-seeking or affiliative functions was not found problematic (Rosenthal & Kobak, 2010). Turning towards peers for attachment needs could instead reflect the presence of other behavioral systems such as the affiliative or sexual systems (Kerns et al., 2006). Consequently, attachment strength to friends may not display differential effects for the wellbeing of adolescent males and females because the negotiable and transitory nature of these relationships often prevent them from becoming enduring attachment bonds (Ainsworth, 1989) that have repercussions for adolescent wellbeing (Diamond & Hicks, 2004).

Romantic Partners as Attachment Figures

This study also did not find evidence indicating that attachment strength to romantic partners would be more significant for the psychological wellbeing of female than male adolescents. Previous findings of gender differences in the influence of romantic relationships on psychological health have generally been circumscribed to adolescents who began dating at an early age or reported overinvolvement in dating (Thomas & Hsiu, 1993; Zimmer-Gembeck, 2002). Researchers investigating romantic relationships in later adolescence have either found that romantic involvement had similar effects on the wellbeing of both male and female adolescents, or little evidence of links between romantic involvement and psychological functioning (Neeman, Hubbard, & Masten, 1995; Nomaguchi, 2008; Zimmer-Gembeck et al., 2001). As the majority of romantically-involved adolescents sampled were late adolescents, it is possible that there were no gender differences in the influence of romantic partners on adolescent adjustment because the negative effects of being in a romantic relationship for females had already dissipated (Joyner & Udry, 2000; Nomaguchi, 2008).

Other studies have demonstrated adolescent romantic relationships to have negligible effects on self-esteem and depression (McMahon & Wilkinson, 2004). It could be argued that the nature of romantic relationships in adolescence is largely experimental, and may not yet provide sufficient beneficial experiences to confer developmental advantages (Brendgen et al., 2002). Even in late adolescence, the quality of romantic relationships might not be important in an absolute manner for adolescent psychological health (Overbeek et al., 2003). The failure to demonstrate sex effects on the relationship between attachment strength to romantic partners and adolescent adjustment could also reflect the possibility that adolescent romantic relationships lack the social and emotional depth to be considered significant relationships (Brown et al., 1999) which are influential for adolescent wellbeing (Brendgen et al., 2002; McMahon & Wilkinson, 2004).

7.4.5 Individual Differences in Attachment Models

Full support was, however, demonstrated for the hypotheses regarding the contributions of global attachment models to adolescent wellbeing. Attachment models were found to uniquely predict adolescent adjustment beyond the links established with different attachment relationships. Anxiety was the largest predictor of Depression, Self-esteem, Stress, and School Attitude for all adolescents regardless of romantic status, with Avoidance similarly important, albeit to a lesser extent, for most of the psychological health variables. Avoidance did not significantly predict Stress for all adolescents and School Attitude among romantically-involved adolescents.

Results from both the intercorrelations and regression equations were consistent with the view that insecure attachment models are generally a risk factor for psychopathology (Rutter, 1990). Insecure working models result in the development of

“maladaptive contingencies of worth” (Roberts, Gotlib, & Kassel, 1996, p. 312) and differences in distress alleviation and emotional regulation (Feeney, 1995; Mikulincer & Florian, 1998; Mikulincer & Sheffi, 2000), with insecurely attached individuals relying on secondary and sub-optimal attachment strategies for regulating affect (Mikulincer et al., 2003).

There is already considerable literature demonstrating that individual differences in attachment models have varying effects for adolescent wellbeing (Mikulincer & Shaver, 2007; Shaver & Mikulincer, 2002). Adolescents with insecure attachment models were found to display poorer adjustment than securely attached individuals, with each insecure attachment style exhibiting a characteristic pattern of maladjustment (Cooper et al., 1998; Cooper et al., 2004). Given that attachment expectancies are considered the main source of continuity between attachment experiences in infancy and attachment in adolescence and adulthood (Bretherton, 1985), the present findings serve to underscore the importance of Anxiety and Avoidance in predicting psychological health across multiple indices of adolescent functioning.

Depression and Self-esteem

The differences in secondary attachment strategies might account for the differential influences of attachment anxiety and avoidance on adolescent psychological health (Mikulincer & Shaver, 2007). Similar to earlier research (e.g., Cooper et al., 1998; Cozzarelli et al., 2000), Anxiety was found more predictive of adolescent adjustment than Avoidance. Anxious individuals adopt hyperactivating strategies that involve hypervigilance to threat cues, a tendency to focus on personal distress and to ruminate on negative thoughts, and the use of emotion-focused coping strategies that exacerbate rather than diminish distress (Belsky, 2002; Mikulincer et al., 2003). By contrast, avoidant individual adopt deactivating strategies that involve distancing themselves

either cognitively or behaviorally from the source of distress by diverting attention from threat cues or through inhibiting elaborate encoding of information (Belsky, 2002; Mikulincer et al., 2003).

The profile that characterizes Anxiety more closely resembles the patterns of expectations and thinking demonstrated in depression and low self-esteem (Cummings & Cicchetti, 1990; Davila et al., 2005) as hyperactivating strategies serve to intensify doubts about the self and increase vulnerability to rejection or abandonment (Griffin & Bartholomew, 1994; Mikulincer & Shaver, 2007). Accordingly, stronger associations between Anxiety and both depression and low self-esteem than between Avoidance and these same variables have been reported in the attachment literature (Cooper et al., 1998; Muris et al., 2001; Lee & Hankin, 2009; Schmitt & Allik, 2005).

Stress

Furthermore, individuals high in Anxiety are likely to have fewer coping strategies and to interpret negative interpersonal events in terms of personal unworthiness or incompetence when faced with stress (Cummings & Cicchetti, 1990; Hammen, Burge, Daley, Davila, Paley, & Rudolph, 1995; Margolese et al., 2005). Their hyperactivating strategies lead them to magnify threats and to view their coping resources as inadequate (Mikulincer & Florian, 1995, 1998; Moller, Fouladi, McCarthy, & Hatch, 2003), with anxious individuals engaging more in emotion-focused coping strategies than active problem-solving (Mikulincer & Shaver, 2007). When faced with stress, anxious individuals demonstrated the lowest self-efficacy, used non-optimal emotion-focused coping, and experienced higher levels of distress despite turning to others for help (Mikulincer & Florian, 1998).

Conversely, individuals high in Avoidance tend to downplay stress (Bowlby, 1973), deny or minimize inner distress (Greenberger & McLaughlin, 1998) and engage in

negative coping (Howard & Medway, 2004). Their ability to engage distancing strategies diverts their attention away from emotionally upsetting issues (Fraley, Garner et al., 2000), and may serve to mitigate some of the impact of stress (Cooper et al., 2004). Although viewing their coping resources as adequate (Mikulincer & Shaver, 2007), the coping strategies employed by avoidant individuals tend to break down when faced with a chronic stressor (Mikulincer & Florian, 1995), or under a cognitive load (Mikulincer et al., 2004). The use of a self-report instrument presently to assess stress may have been insufficient to confer a cognitive load capable of diminishing avoidant adolescents' ability to suppress stress-related thoughts (Fraley & Shaver, 1997; Mikulincer et al., 2004), thereby resulting in negligible associations between Avoidance and Stress.

School Attitude

The deactivating strategies employed by avoidant individuals may also explain the lack of relationship demonstrated between Avoidance and School Attitude among romantically-involved adolescents. While avoidant individuals exhibit little self-criticism in nonsocial domains, they tend to appraise themselves unfavorably in both social and interpersonal contexts (Mikulincer & Shaver, 2007). Having an intimate friend is associated with more positive attitudes to school (Wilkinson & Kraljevic, 2004), with the value peers place on education positively linked to academic success, greater personal value placed on education, and more motivation, effort and persistence in school (Goodenow & Grady, 1993). Furthermore, involvement in a romantic relationship may serve to elevate the avoidant adolescent's feelings of social acceptance and belonging with the peer group without needing to defensively inflate their self-perceptions (Mikulincer & Shaver, 2007; Nieder & Seiffge-Krenke, 2001; Zimmer-Gembeck et al., 2001). Avoidant adolescents with romantic relationships may therefore

report better engagement with school because of increased positive self-appraisals within the peer group and being able to use their romantic partners for attachment needs (Wilkinson & Kraljevic, 2004), without the need for deactivating strategies which may otherwise undermine their attitudes towards school.

7.4.6 Limitations and Future Directions

A major limitation of the present study is that causality of the associations between attachment figures and adolescent psychological health cannot be assumed from the cross-sectional design. Although it seems plausible that attachment relationships with parents and peers foster adolescent adjustment, the reverse can also be argued where well-adjusted adolescents more easily maintain their relationships in an increasingly differentiated attachment hierarchy during attachment reorganization. Individual differences in attachment networks are not yet well understood (Laursen & Mooney, 2008), with attachment reorganization instigating a complex restructuring in the meaning, functions, and composition of the attachment hierarchy (Collins, 1997; Rosenthal & Kobak, 2010). Further longitudinal research examining the importance of attachment figures as an attachment network for adolescent adjustment is therefore warranted.

Another limitation is the reliance on attachment strength as the sole measure of attachment when investigating the links between different attachment figures and adolescent adjustment. Attachment strength reflects the extent to which an attachment figure is used for attachment functions (Feeney, 2004), and may not confer additional advantage for adolescent adjustment given that it is the variations to the norm, and not normative attachment strength, that are considered maladaptive for psychological functioning (Bowlby, 1969/1982). Furthermore, the availability and utilization of

attachment figures are postulated to comprise two distinct aspects of attachment which show different developmental trajectories (Kerns et al., 2006). Researchers have argued that it is the confidence in the availability of attachment figures to satisfy attachment needs, rather than the actual utility of them, that is integral to adolescent psychological health (Arbona & Power, 2003; Paterson et al., 1995). Adolescents may continue utilizing parents as attachment figures even when they perceive the relationship as being non-optimal or even unsatisfying (Greenberg et al., 1983). That said, the security of attachment to a specific attachment figure was found more highly related to the actual utility than desire for that person as an attachment (Trinke & Bartholomew, 1997). Using additional measures that distinguish between these different components of normative attachment may provide a clearer picture of the associations between attachment organization and adolescent psychological health.

7.4.7 Conclusions

Overall, the current findings demonstrated that the links established between attachment strength to different attachment figures and adolescent psychological health were not straightforward and instead involved a multiplicity of factors. Of particular significance was the finding that higher attachment strength reported to attachment figures was not unanimously indicative of increased importance for adolescent wellbeing, contrary to expectations. Rather, the relationships between attachment figures and adolescent wellbeing were more complex and dependent on several factors such as age, identity of the attachment figure, and the index of adolescent adjustment. Only attachment strength to fathers was directly associated with adolescent stress after accounting for attachment expectancies, while age but not sex moderated the relationships between attachment to peers and depression and self-esteem among

romantically-involved adolescents. Global attachment models were most predictive of adolescent adjustment with Anxiety a better indicator than Avoidance of all outcomes variables.

Although weak relationships between normative attachment strength and adolescent adjustment were evinced in this cross-sectional study, variations in the timing and extent of attachment reorganization are suggested to give rise to adolescent maladjustment (Bowlby, 1969/1982). Age was presently found to moderate the relationships between peer attachment and adolescent adjustment, and there is already support from cross-sectional studies that both premature and delayed reorganization of attachment functions are associated with greater internalizing and externalizing behaviors (Berman & Sperling, 1991; Dishion et al., 2004; Nomaguchi, 2008; Perosa et al., 1996; Vitaro et al., 2000). However, the nature of cross-sectional research is that the findings are inferred rather than directly observed. Moreover, there is also a lack of longitudinal research documenting changes in adolescent attachment relationships as they unfold over time (Friedlmeier & Granqvist, 2006). Given that the influences of attachment figures on adolescent wellbeing differ across adolescence depending on the developmental stages of the maturing adolescent (Allen & Land, 1999; Margolese et al., 2005; Sullivan, 1953), this dissertation proceeds to conduct a longitudinal study to better elucidate the relative importance of attachment figures for adolescent psychological health as they undergo normative attachment reorganization over twelve months.

CHAPTER 8

Longitudinal Study: Attachment Reorganization and Adolescent Adjustment

8.1 The Present Study

The present dissertation intends to extend earlier cross-sectional results by providing a longitudinal perspective on attachment reorganization and its effects on adolescent psychological health. It addresses both the dearth of longitudinal research demonstrating the developmental model of attachment reorganization (Fraley & Davis, 1997; Nickerson & Nagle, 2005), and a paucity of studies examining the relationship between attachment reorganization and adolescent wellbeing (Kenny et al., 1998; Scharf & Mayseless, 2007). Specifically, this research aims to document the process of attachment reorganization over twelve months, and to determine the associations between changes in attachment relationships and adolescent wellbeing within the context of the attachment hierarchy.

There is now considerable consensus that many important developmental tasks of adolescence find their resolution in the context of attachment and family relationships (Allison & Sabatelli, 1988; Grotevant & Cooper, 1986; Rice, 1990). The two central developmental tasks of establishing autonomy from parents and forming close relationships with peers are involved in the developmental processes that characterize attachment in adolescence (Scharf & Mayseless, 2007; Schoeppe & Havighurst, 1952; Steinberg, 1990) and have significant implications for adolescent wellbeing (Blain et al., 1993; Laible et al., 2000).

Attachment theorists have argued for the importance of multiple attachment relationships in promoting healthy adolescent adjustment (Howes, 1999). Yet the

relative contributions of different attachment figures to adolescent psychological health are particularly challenging to measure given that adolescents develop new attachment relationships and reorient towards peers for attachment functions (Hazan & Zeifman, 1994; Wilkinson, 2006b). Few studies have attempted to examine the proposed function of attachment networks (Pitman & Scharfe, 2010) and individual difference in attachment hierarchies are not yet well understood (Laursen & Mooney, 2008). Given that adolescent adjustment has mostly been assessed relative to the quality of attachment relationships (Wilson & Wilkinson, 2012) and less is known about normative changes in attachment beyond infancy (Kerns et al., 2006), examining adolescent wellbeing within the developmental context of attachment reorganization would provide a new perspective on the importance of attachment relationships for adolescent wellbeing.

8.1.1 Objective Three: Changes in Attachment Reorganization during Adolescence

The third objective of this dissertation is to document the changes in attachment reorganization amongst Australian adolescents over twelve months. To current knowledge, only one study (i.e., Friedlmeier & Granqvist, 2006) has directly examined the developmental process of attachment reorientation in adolescence through their prospective longitudinal study. Using a Guttman scaling procedure, Friedlmeier and Granqvist (2006) confirmed the stepwise reorientation of attachment functions on a cross-sectional level but could not fully verify the predicted sequence of attachment movement from parents to peers longitudinally. Reorientation to peers for attachment needs occurred regardless of romantic involvement, whilst adolescents with stable romantic partners and those who formed new romantic relationships between assessment times demonstrated a similar extent of attachment reorganization.

Examining the process of attachment reorganization longitudinally would add to the attachment reorganization literature and offer a comparison with the findings of Friedlmeier and Granqvist's (2006) study.

Conducting a longitudinal study on the normative development of adolescent attachment is essential as cross-sectional studies are subjected to cohort effects (Doherty & Feeney, 2004). Examining changes in adolescent attachment relationships as a function of age (Markiewicz et al., 2006) will allow the patterns of development in individual attachment relationships to be observed (Nickerson & Nagle, 2005). Identifying the process of attachment reorientation and formation as it occurs within the context of establishing and dissolving adolescent romantic relationships will also help clarify if adolescents demonstrate "backtransference" and resume using parents or friends for attachment functions in the event of a relationship breakup (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). Finally, conducting a longitudinal study will strengthen the reliability of findings from the earlier cross-sectional study, with the specific intention of replicating earlier results pertaining to age differences in the use of different attachment targets for attachment needs.

8.1.2 Developmental Changes in Adolescent Attachment Relationships

An important issue not adequately addressed in the attachment reorganization literature is the definition of change in adolescent attachment relationships. Change is a recurrent theme in the adolescent landscape and the same can be said of attachment relationships during adolescence as they progress from complementary hierarchical relationships with parents to egalitarian symmetrical relationships with peers (Bowlby, 1969/1982, 1979; Hazan et al., 2006; Pitman & Scharfe, 2010). Empirical attention to the processes wherein adolescents maintain parental attachment bonds while forming

new peer attachment relationships is relatively recent, and there is still a lack of longitudinal research documenting changes in attachment relationships as they unfold over time (Friedlmeier & Granqvist, 2006; Rosenthal & Kobak, 2010). The normative development processes of attachment comprise changes in the meaning and functions of attachment relationships (Collins, 1997) and in the content and structure of attachment hierarchies, although the dynamics and functions of attachment remain similar across the life span (Hazan & Shaver, 1994; Hazan & Zeifman, 1994). Developmental changes in adolescent attachment relationships are therefore multifaceted and there are various ways which change can potentially be assessed.

Research demonstrating the process of attachment reorganization has mostly employed different measures of change to demonstrate attachment reorientation on a cross-sectional level. These different conceptualizations of change are reviewed here and their advantages and disadvantages presented. The extent to which each definition verifies the developmental process of attachment reorganization in adolescence is also examined. Further, this review informs the different definitions of change used in this longitudinal study.

8.1.3 Premises of Change

There are three general principles postulated to occur during adolescence that invoke changes to attachment relationships. Firstly, adolescents expand their attachment networks beyond the immediate family to include extrafamilial members such as friends and romantic partners (Hazan & Zeifman, 1994; Wilkinson, 2006b). Secondly, adolescents begin to reorient towards their peers to fulfill attachment functions (Bowlby, 1969/1982; Marvin & Britner, 1999). Thirdly, romantic partners gradually ascend through the ranks of the attachment hierarchy such that they replace parents,

usually mothers, as primary attachment figures by late adolescence or young adulthood (Bowlby, 1969/1982; Hazan & Zeifman, 1999). A close friend is able to fulfill the role of primary attachment figure in the absence of serious romantic involvement (Doherty & Feeney, 2004; Fraley & Davis, 1997).

These three premises form the basis by which researchers previously defined changes in attachment relationships. Most studies have, however, involved cross-sectional designs which identified attachment figures across different ages of adolescents, and not between different times of assessment. The methodological limitation of cross-sectional research means that developmental changes in adolescent attachment relationships are inferred rather than directly observed.

8.1.4 Conceptualizations of Change: A Review

Researchers have conceptualized changes to adolescent attachment relationships in several ways. Most definitions of change reviewed here involve at least one of the three premises postulated to occur to attachment networks during adolescence.

8.1.4.1 Change in Total Attachment Strength

An elementary way of measuring change in adolescent attachment is by demarcating the difference in the total amount of attachment reported to all attachment figures nominated over different assessment times. Given that adolescents expand their attachment hierarchies and increasingly direct attachment towards peers (Bowlby, 1969/1982; Allen, 2008), the total amount of attachment reported is expected to increase as more individuals are used for attachment functions. The main advantage of this method is that it is simple to calculate and provides a quick indicator of changes in

attachment, with an increase or decrease in total attachment strength indicative of relative change in adolescent attachment.

A major disadvantage of using this method involves limitations in the construction of the Who-To. Rankings indicate the relative preference for one attachment figure over another and not the extent to which each attachment figure is used for a specific function (Mayselless, 2004). Restrictions in the ability to allow joint rankings or to nominate all attachment figures used for specific attachment functions limits this measure from accurately assessing attachment to subsidiary attachment figures (Mayselless, 2004; Trinke & Bartholomew, 1997). Thus, there are ceiling effects in the amount of attachment reported to any attachment figure depending on the number of attachment figures ranked, and the total attachment strength reported is relative to the number of attachment figures used for attachment functions. Being a generic measure of attachment change, this definition does not clarify how attachment to each attachment figure changes over time.

8.1.4.2 Change in Primary Attachment Figure

The identification of the primary attachment figure for attachment functions involves nominating either a parent or peer as the preferred attachment figure for each attachment function, with the proportion of parent versus peer nominations demonstrating the process of attachment reorganization. Studies using this measure of change have generally found that reorientation towards peers occurred for Proximity-seeking by early adolescence, Safe Haven during middle adolescence, and Secure Base by late adolescence or young adulthood (Fraley & Davis, 1997; Hazan & Zeiman, 1994; Rowe & Carnelley, 2005). Thus, it is anticipated that the developmental reorganization of attachment relationships will be similarly demonstrated between different times of

assessment, with adolescents increasingly directing more attachment needs towards peers and less towards parents in the same sequence.

Although this conceptualization of change provides a simple index of reference for determining changes in who adolescents select for different attachment needs, it is limited in its identification of primary attachment figures only. The exclusive focus on primary attachment figures discounts the complexities of adolescents' attachment networks and disregards other attachment figures that adolescents use but not report as primary attachment figures (Kobak et al., 2007). Application of this dichotomous coding rule means that changes in attachment refer to a broad category of attachment relationship (e.g., parent or peer) rather than specific dyadic attachment bonds (e.g., mother, father, friend, or romantic partner) (Kobak et al., 2007; Markiewicz et al., 2006; Pitman & Scharfe, 2010). Consequently, this measure of change does not adequately assess changes in attachment for any specific attachment relationship nor reflects if attachment functions are being served by the same attachment figure, but rather which category of attachment relationship serves what attachment function at any given point.

8.1.4.3 Change in Attachment Strength to Multiple Attachment Figures

The third conceptualization of change addresses some of the methodological limitations imposed above by identifying changes in attachment to multiple attachment figures in the attachment hierarchy. Change is measured by the extent to which attachment strength to each attachment figure changes between different times of assessment. Specifying change in this manner is advantageous in determining the amount of change reported to different attachment figures for specific attachment functions, and examining the roles that subsidiary attachment figures have fulfilling attachment needs. It has been empirically validated in cross-sectional studies with the

romantic partner increasingly serving attachment functions and ascending through the attachment hierarchy across different age groups of adolescents (Markiewicz et al., 2006; Rosenthal & Kobak, 2010). Changes in attachment are hypothesized to reflect the process of attachment reorientation longitudinally, with adolescents directing their attachment needs from mostly mothers to close friends, and then to romantic partners.

An apparent difficulty in defining change using this method is that change scores are themselves contentious with controversy regarding their reliability and value in behavioral and social sciences research (Williams & Zimmerman, 1996). Some researchers have claimed that change scores have lower reliability than the original scores themselves (Cronbach & Furby, 1970; Lord, 1956), whereas others have argued that change scores are not inherently unreliable (Humphreys, 1996; Rogosa & Willett, 1983) but dependent on several factors (L. M. Collins, 1996; Miller & Kane, 2001). Change scores are indeed valid under conditions such as quasi-experimental designs (Armor, 1975; Kenny, 1975, 1979), and may actually be preferred when determining differences between two points of assessment (Maxwell & Howard, 1981). Defining change as differences in attachment strength reported to each attachment figures for specific functions thus appears a useful way of documenting attachment reorganization in adolescence.

8.1.4.4 Change in Rank of Attachment Figures

The fourth conceptualization of change bypasses the issues associated with change scores by ranking individuals rather than specific items (Guttman, 1950). In this definition of change, a stepwise reorientation of attachment functions is demonstrated with given scores indicating the utility of a peer (e.g., romantic partner or friend) for an attachment function and the attachment functions preceding it (if any). Higher scores

reflect a greater propensity to use the peer as an attachment figure (Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006). Assessing change in this manner reflects the reorientation of attachment needs across different attachment figures in a sequential order and also determines if the same attachment figure is serving the lower priority attachment functions. Several studies applying Guttman scaling have documented a stepwise movement of attachment functions from parents to peers in the order of Proximity-seeking, Safe Haven, and Secure Base (Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006). It is predicted that changes in attachment will reflect the longitudinal process of attachment reorientation from parents to friends, and then romantic partners, and also occur in the predicted sequence from Proximity-seeking to Secure Base.

One limitation of using a scale to rank individuals is that the relative amount of change cannot be ascertained although a change in attachment figure may be reported. This may not be problematic when the intent is to demonstrate attachment reorganization. However, the dichotomous coding rule prevents previous studies from differentiating between specific peer attachment figures (Markiewicz et al., 2006; Pitman & Scharfe, 2010). Furthermore, 10% of adolescents did not conform to the predicted sequence of attachment movement, with only 38% of all adolescents demonstrating the stepwise reorientation of attachment needs longitudinally (Friedlmeier & Granqvist, 2006). Further research using this definition of change is necessary to determine if the stepwise movement of attachment functions can be documented among different types of peers, and to validate previous results regarding the longitudinal sequential movement of attachment functions from parents to peers.

Alternatively, three less direct but nonetheless potentially useful ways of conceptualizing change in adolescent attachment relationships involve changes to the attachment network. These definitions entail changes in (1) the size of the attachment

network, (2) the number of friends nominated in the attachment network, and lastly, (3) current romantic status.

8.1.4.5 Change in Attachment Network Size

Changes in attachment networks are important to study as they relate to changes in the significance of various needs and the ability of different network members to fulfill these needs (Wellman, Wong, Tindall, & Nazer, 1996). They are postulated to serve an adaptive function during transitions with more changes in networks expected during periods of transition than stability (Hortacsu & Aydin, 2007). The proportion of peers relative to adults increases significantly from early adolescence onwards (Feiring & Lewis, 1991) with both a larger number of, and more support from friends reported (Degirmencioglu et al., 1998; Levitt, Guacci-Franco, & Levitt, 1993). Changes in the size of attachment networks during adolescence are expected to influence how often adolescents turn to parents or peers for attachment needs, with an increase in attachment network size corresponding to greater use of peers as attachment figures.

One limitation of this conceptualization of change involves determining which member of the attachment network is used for attachment functions. Whereas the average attachment network comprises 9.69 members (Doherty & Feeney, 2004), only approximately 5.38 attachment figures are reported (Trinke & Bartholomew, 1997). A maximum of three attachment figures are generally nominated for each attachment function (Doherty & Feeney, 2004; Rosenthal & Kobak, 2010). Consequently, change in the size of the attachment network does not demonstrate isomorphic correspondence between members of the attachment network and those used as an attachment figure, and also the strength of attachment reported to each attachment figure.

8.1.4.6 Change in Friendship Network Size

Another manner of conceptualizing change is by examining the number of friends nominated in the adolescent attachment network. Friendships are purportedly most important in adolescence (Chan & Poulin, 2007), wherein friendship bonds are most influential (Berndt, 1979) and friendship networks are largest in size (Claes, 2003). Making friends becomes a core activity for personal development (Aboud & Mendelson, 1996; Marsh et al., 2006) and changes in adolescent friendships are postulated to parallel other attachment relationships, including increased trust, intimacy, and mutual self-disclosure (Zimmermann, 2004). The normative increase in the number of friends reported in the attachment network is expected to correspond to a greater reorientation towards friends for attachment needs, where increased involvement with friends allow adolescents to use peers as attachment figures (Waters & Cummings, 2000).

Several difficulties are associated with using the number of friends in the attachment network to define change in attachment. Friendships involve a high ‘churn factor’ and adolescents’ friendship networks can change rapidly over several weeks (Berndt, Hawkins, & Hoyle, 1986; Degirmencioglu et al., 1998). This instability creates conceptual and methodological difficulties in identifying friends as attachment figures because friendships take approximately 5.5 years to develop into an attachment relationship (Fraley & Davis, 1997). Studying new friendships, in lieu of an increase in the number of friends nominated in the attachment network, may be unable to identify friendship attachments (Grabill & Kerns, 2000), or to relate changes in attachment with the original friends to whom attachment was initially directed.

A fundamental issue not previously addressed by the attachment reorganization literature is the definition of friends as attachment figures. Support demonstrated for the

reorientation of attachment needs from parents to peers have generally involved the nomination of a peer category (e.g., best friend, friend) and not the identity of the peer. The existing literature has tended to omit if the same peer was nominated for different attachment functions, or if different friends were nominated for the same function. This omission creates some controversy in defining friend attachment as adolescents can have several best friends (Berndt, 1999; Branje et al., 2007) who are viewed as interchangeable, with nominations of best friends changing over brief periods (Brown, 2004; Bowker, 2004). However, other studies have found best friendship ‘renewal’ to be normative and important, with the presence of any best friendship as developmentally significant as a stable best friendship (Wojslawowicz Bowker, Rubin, Burgess, Booth-LaForce, & Rose-Krasnor, 2006). Collectively, it appears that adolescents continue to direct attachment towards friends even as the friendship network changes and it is appropriate and methodologically simpler to treat friend attachment as a category instead of specific individuals.

8.1.4.7 Change in Current Romantic Status

The final definition of attachment change involves identifying the current romantic status of adolescents at each point of assessment. Ample evidence from cross-sectional studies examining either the process of attachment reorganization (e.g., Doherty & Feeney, 2004; Fraley & Davis, 1997; Freeman & Brown, 2001; Hazan & Zeifman, 1994) or the attachment hierarchy (e.g., Rowe & Carnelley, 2005; Trinke & Bartholomew, 1997) support Bowlby’s (1969/1982) postulation that a romantic partner eventually rises to the top of the attachment hierarchy. Since the onset of adolescence begins the search for a partnership with a same-age peer (Ainsworth, 1989), the formation of a romantic pair-bond is integral to attachment reorganization, and whether

adolescents are romantically-involved influences who adolescents use to satisfy attachment needs (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). It is expected that longitudinally, romantically-involved adolescents will reorient mostly from friends, and to a lesser extent from parents, towards romantic partners for attachment functions

While demonstrating the importance of romantic status in facilitating attachment reorientation from parents to peers, Friedlmeier and Granqvist (2006) found adolescents who became romantically-involved between the assessment times to ultimately demonstrate similar attachment reorientation as adolescents with romantic partners throughout their study. This complicates the understanding of attachment reorganization in adolescence as it was unclear if the same romantic partner was reported at both times (Friedlmeier & Granqvist, 2006), and because attachment reorientation to romantic partners is postulated to approximate two years (Hazan & Zeifman, 1994; Fraley & Davis, 1997). Alternatively, age and previous experiences in romantic relationships supposedly result in increased comfort with and willingness to use romantic partners for attachment needs (Furman & Wehner, 1994, 1997), with young adults using their romantic partners for all attachment functions in relatively new romantic relationships (Heffernan, Fraley, Vicary, & Brumbaugh, 2012).

It appears that adolescents who are romantically-involved will reorient towards romantic partners and demonstrate higher attachment to them even if different romantic partners are reported. A more refined conceptualization of change would instead involve a comparison of adolescents who remain single with those who initiate, lose, or maintain romantic relationships between different assessment points. This enables investigation into determining if a change in romantic status or having the same romantic partner influences the extent of change in attachment towards different attachment figures.

8.1.5 Conceptualizations of Change in the Present Study

As it is the intention of the current research to confirm the developmental process of attachment reorganization amongst adolescents over twelve months, this longitudinal study firstly focuses on differences in self-reported attachment strength between early and late adolescents. Identifying changes in adolescent attachment relationships in this fashion would enable this study to determine if age differences demonstrated are the result of developmental differences in attachment strength reported to specific attachment figures or cohort differences, and also to address some criticisms of the attachment reorganization literature.

Earlier cross-sectional results established a significant main effect of age that was further qualified by a significant interaction with attachment targets for all adolescents. Some preliminary evidence of a significant interaction between age and sex was also demonstrated and warrants further exploration. Another significant interaction between age and attachment targets was demonstrated for the subset of adolescents with romantic partners. Three definitions of change are required to appropriately encapsulate the analyses needed for the longitudinal study, and correspond to the first, third, and last conceptualizations of change reviewed above. Given the high 'churn factor' associated with adolescent friendships (Cairns et al., 1995; Chan & Poulin, 2007) and methodological difficulties in matching friends nominated between the two times of assessment, this longitudinal research also examines attachment strength to friends in general, rather than specific friendships.

The first conceptualization of change reported is adapted by documenting the average of attachment strength reported by all adolescents to mother, father, and friends. Restricting the number of attachment figures reported for each attachment function means that changes in overall attachment strength reflect only differences in reported

utility of these attachment targets between assessment times. By examining changes in the average amount of attachment strength reported twelve months apart, this study will be able to determine if age differences demonstrated earlier by early and late adolescents are maintained longitudinally and if the age differences in attachment strength between adolescent males and females become more apparent over time.

The second definition of change used involves assessing differences in attachment reported to individual attachment figures over twelve months. This facilitates the documentation of the developmental processes of attachment reorganization by determining if reorientation to different attachment figures for attachment functions varies over time as postulated by attachment theory.

For the subset of romantically-involved adolescents, a third reference of change is applied to determine the importance of current romantic involvement in facilitating attachment reorganization. Specifically, this study expands on the findings of Friedlmeier and Granqvist (2006) by comparing adolescents who reported the same romantic partner throughout the year with those reporting a different romantic partner after twelve months. This will enable an investigation into the extent of reorientation towards romantic partners for attachment functions depending on whether the romantic partner changes in the preceding twelve months, and also the amount of attachment reported to mothers, fathers, and friends as a function of current romantic status.

Another aim of this research was to demonstrate the longitudinal model of attachment reorganization proposed by Hazan and Zeifman (1994, 1999). Rather than applying a Guttman scaling method, this study assesses change using the three premises of change postulated to occur to attachment relationships (see 8.1.1.2). A normative reorientation of attachment functions is indicated longitudinally if these criteria are met: (1) an expansion of the adolescent attachment network; (2) a decrease in mother attachment; (3) an increase in friend attachment; and (4) an increase in partner

attachment (if applicable), over twelve months. To validate newer research, the influences of attachment expectancies on normative attachment reorganization are also accounted for to determine if Anxiety and Avoidance differentially affect the longitudinal process of attachment movement as demonstrated by Friedlmeier and Granqvist (2006).

8.1.6 Apriori Hypotheses

Several apriori hypotheses were constructed according to Hazan and Zeifman's (1994) developmental model of attachment reorganization. Determining if attachment reorganization unfolds longitudinally as predicted would provide validity to previous cross-sectional research and establish if developmental differences previously demonstrated are the result of genuine age differences or cohort effects.

8.1.6.1 Age Differences

Early adolescents reported higher overall attachment strength to mothers, fathers, and friends compared to late adolescents in the cross-sectional study. This finding is made explicable when considering that early adolescents continue to rely significantly more on parents as attachment targets even while they use peers as ad-hoc attachment figures (Nickerson & Nagle, 2005; Waters & Cummings, 2000) and despite involvement in a romantic relationship (Freeman & Brown, 2001). By contrast, late adolescents are more oriented towards friends than parents for attachment needs, with romantically-involved late adolescents using romantic partners more, and parents and friends less, for attachment functions (Goh & Wilkinson, 2007; Markiewicz et al., 2006).

As individuals are postulated to incrementally move attachment functions from parents to peers throughout adolescence (Hazan & Zeifman, 1999; Weiss, 1991), early adolescents are expected to use friends more and parents less for attachment needs, and to report a decline in the overall amount of attachment strength reported to these three attachment figures over twelve months. Alternatively, late adolescents would have already reoriented their attachment needs from parents to friends, but may also be shifting attachment functions from friends towards romantic partners. Attachment strength reported collectively to mothers, fathers, and friends is hypothesized to remain stable or decline slightly over this period for late adolescents.

8.1.6.2 Gender Differences

An unexpected finding to emerge from the cross-sectional study was the trend of higher total attachment strength reported by late adolescent females than males whereas early adolescent males and females endorsed similar attachment ratings. Overall attachment strength may initially be similar for early adolescents as males and females were previously found to report similar attachment to mothers but higher attachment to fathers and friends respectively (Freeman & Brown, 2001; Markiewicz et al., 2006; Nickerson & Nagle, 2005). Although both sexes reportedly use fathers less, and friends more, for support and proximity-seeking with age (Paterson et al., 1994), this disparity in attachment ratings could also result from qualitative differences in their friendships. Specifically, late adolescent males may have yet to develop the strength of peer attachment as reflected in the friendships of late adolescent females (Branje et al., 2007; Cairns et al., 1995; Connolly & Johnson, 1996; Shulman et al., 1997), and thus report less overall attachment than the latter due to both their decreased dependence on fathers, and comparatively weaker attachment to friends.

Since early adolescents report using fathers more than late adolescents for attachment functions even as they increasingly select friends for attachment needs (Paterson et al., 1994; Rosenthal & Kobak, 2010), it is firstly predicted that early adolescents will continue reporting greater total attachment than late adolescents. Early adolescent females should also report higher overall attachment strength relative to early adolescent males if the trend of gender differences demonstrated cross-sectionally among late adolescents genuinely depicts age differences. However, adolescent males purportedly experience steeper improvements in their same-sex friendships than females that become more apparent over longer periods of time (Way & Greene, 2006; Helsen et al., 2000), and thus it is anticipated that attachment ratings between late adolescent males and females will become more similar over twelve months.

8.1.6.3 Attachment Figures

Earlier cross-sectional results accorded with previous studies demonstrating age differences in the use of specific attachment targets (Fraley & Davis, 1997; Hazan & Zeifman, 1994; Markiewicz et al., 2006). Early adolescents were found to report higher attachment strength to mothers and fathers regardless of romantic involvement whereas late adolescents without romantic partners used friends significantly more as attachment figures. Romantically-involved early and late adolescents did not differ in their use of friends whilst romantic partners were chosen more by late than early adolescents.

Adolescence is a period where individuals explore and learn skills to form peer attachment relationships with close friends and subsequently, romantic partners (Kobak et al., 2007). While close friends provide equivalent or more support than parents, and play a larger role in providing felt security and emotional comfort during adolescence (Furman & Buhrmester, 1992; Waters & Cummings, 2000), they gradually lose their significance as attachment figures for adolescents who establish romantic relationships

(Collins & Laursen, 2000). Romantic partners become increasingly important as attachment figures with age and experience (Connolly & Johnson, 1996; Furman & Wehner, 1994, 1997), and this corresponds to using friends and mothers less for attachment needs (Feeney, 2004; Goh & Wilkinson, 2007; Markiewicz et al., 2006). Romantically-involved individuals appear to reorient towards romantic partners for attachment functions irrespective of the length of the romantic relationship (Friedlmeier & Granqvist, 2006; Heffernan et al., 2012) or level of need (Campa et al., 2009).

For All Adolescents

Aligned with an attachment reorganization perspective (e.g., Hazan & Zeifman, 1994; Markiewicz et al., 2006), it is hypothesized that early and late adolescents will keep reorienting attachment functions from parents to friends but demonstrate different patterns of change in attachment relationships. Attachment strength to friends is predicted to increase as early adolescents continue shifting attachment needs from parents to friends, and will coincide with a decrease in attachment strength to mothers. For late adolescents, attachment strength to friends is hypothesized to remain stable or decrease slightly as they may be orienting away from friends towards romantic partners for attachment functions. Mother attachment is expected to remain constant as late adolescents predictably would have already moved attachment functions from mothers to friends. Fathers are consistently the least used of attachment targets (Freeman & Brown, 2001; Markiewicz et al., 2006), and thus attachment strength reported to fathers is expected to remain constant for all adolescents.

For Adolescents in Romantic Relationships

As a similar extent of attachment reorganization was found to occur regardless of whether an existing or new romantic relationship was reported (Friedlmeier &

Granqvist, 2006), it appears that adolescents reorient towards romantic partners for attachment needs as they mature irrespective of whether the same romantic partner is reported over time. Changes in attachment relationships are hypothesized to be similar between adolescents with the same or a different romantic partner, with attachment strength to romantic partners increasing over time as romantically-involved adolescents reorient towards romantic partners for attachment needs. A corresponding decrease in attachment to friends is expected. Attachment to mothers and fathers are predicted to remain constant as romantically-involved adolescents are expected to already be shifting attachment needs from friends to their romantic partners.

8.1.7 Attachment Reorganization Over Time

In the only longitudinal study examining attachment reorganization amongst adolescents, Friedlmeier and Granqvist (2006) demonstrated several patterns of change in adolescent attachment relationships, whereby only two-thirds of all adolescents reporting changes in attachment relationships with 38% of adolescent demonstrating the predicted movement of attachment from parents to peers. Another 37% of adolescents demonstrated a “backtransference” of attachment from peers to parents. By engaging a different conceptualization of change to measure normative attachment reorganization, this study attempts to determine if attachment reorganization can be demonstrated longitudinally.

8.1.7.1 Attachment Reorganization

Similar to previous studies (e.g., Hazan & Zeifman, 1994; Markiewicz et al., 2006), cross-sectional results from this dissertation indicated developmental differences in the

use of attachment figures for different attachment functions. Yet cross-sectional findings are subjected to cohort effects (Doherty & Feeney, 2004) and longitudinal research is warranted to document the developmental changes postulated to occur to attachment relationships over attachment reorganization. Moreover, it is still unclear if adolescents who experience a relationship breakup revert back to parents or friends for attachment functions (Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006). It may also be that the criteria employed by Friedlmeier and Granqvist (2006) was too strict in that fewer adolescents successfully demonstrated the prerequisite shifting of attachment functions from parents to peers in their study. In adopting less stringent criteria, whereby attachment reorganization is determined to have occurred if adolescents demonstrate an expansion of the attachment network and a general reorientation of attachment needs from parents to peers, this study tentatively proposes that attachment reorganization will be demonstrated longitudinally over twelve months.

8.1.7.2 Individual Differences in Attachment Models

Previous cross-sectional findings provided some preliminary support for the differential effects of attachment expectancies on attachment reorganization. Whereas Avoidance inhibited the initial amount of attachment strength reported to parents and friends, Anxiety facilitated a reorientation away from parents, especially mothers, towards peers for attachment functions with romantically-involved adolescents selecting romantic partners most, and those without romantic partners, friends. These results correspond to those of Friedlmeier and Granqvist (2006) who found Anxiety to facilitate the longitudinal reorientation of attachment needs from parents to peers whilst impeding this process among adolescents with high Avoidance. Therefore, differential

influences of global attachment models are postulated for normative attachment reorganization in this longitudinal study.

8.1.8 Objective Four: Associations between Changes in Attachment and Adolescent Adjustment

The final objective of this dissertation aims at determining the associations between changes in attachment relationships and adolescent adjustment. Bowlby (1969/1982) postulated that adolescent maladjustment resulted from individual differences in adolescents' attachment hierarchies wherein adolescents at one extreme cut themselves off from parents, and at the other extreme, remain intensely attached and are unwilling to diversify their attachment needs to other sources. Premature reorganization, where a peer becomes a primary attachment figure in early or middle adolescence, involves premature autonomy from parents (Dishion et al., 2004) and is linked to anxiety, risk-taking behaviors, deviant peer affiliations, and susceptibility to peer pressure to engage in delinquent or antisocial behaviors (Goldstein et al., 2005; Nomaguchi, 2008; Vitaro et al., 2000). Delayed reorganization, wherein parents remain the preferred attachment figure for all attachment needs even in middle to late adolescence (Kobak et al., 2007), is associated with anxiety, depression, and difficulties in interpersonal functioning and transition to adult roles (Berman & Sperling, 1991; Palladino-Schultheiss & Blustein, 1994; Perosa et al., 1996). Based on previous literature, it would appear that adolescents who do not appropriately turn to peers, and away from parents, for attachment needs as they mature are at risk for psychological maladjustment.

By contrast, adolescents' general working models remain relatively stable throughout adolescence (Bretherton, 1985; McCormick & Kennedy, 1994; Weiss, 1982). Adolescents were sometimes found more dismissive in their attachment styles with age (Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000; Doyle et al., 2009),

yet this potentially reflects normative development in lieu of the deidealization of, and decreased dependency on parents (Ammaniti et al., 2000; Carlivati & Collins, 2007; McElhaney & Allen, 2009). However, insecure attachment models may also perpetuate interpersonal difficulties in attachment relationships and contribute to overall poorer psychological health (Carnelley, Pietromonaco, & Jaffe, 1994; Davila et al., 1997; Scharfe, 2007; Wei et al., 2005). During life transitions, individuals tend to evince attachment behaviors and distress consistent with their predominant attachment prototype (Scharfe, 2007; Scharfe & Cole, 2006). Therefore, accounting for the influences of attachment models is particularly pertinent during this normative transition from childhood into adulthood.

8.1.8.1 Changes in Attachment Relationships and Adolescent Adjustment

The previous cross-sectional study found age to moderate the relationships between attachment to friends and depression and between attachment to romantic partners and stress among romantically-involved adolescents. These findings accord with attachment literature demonstrating the growing importance of peer attachment figures in predicting adjustment as adolescents mature (Laible et al., 2000; Wilkinson, 2006b). While a normative expansion of the attachment network is expected, both the placement of friends and romantic partners higher in the attachment hierarchy, and the utility of them, rather than mothers, as primary confidants were associated with poorer psychological functioning among younger than older adolescents (Nomaguchi, 2008; Nickerson & Nagle, 2005; Rosenthal & Kobak, 2010). Moreover, adolescents demonstrating either premature or delayed reorganization reported psychological maladjustment (Berman & Sperling, 1991; Dishion et al., 2004; Goldstein et al., 2005; Perosa et al., 1996; Vitaro et al., 2000). Accordingly, adolescents who do not

demonstrate normative attachment reorganization, that is, who fail to reorient from mothers to friends and romantic partners (if present) for attachment functions, are anticipated to display poorer psychological health outcomes.

8.1.8.2 Individual Differences in Attachment Models and Adolescent Adjustment

Findings from the previous cross-sectional study affirmed the importance of attachment anxiety and avoidance for adolescent psychological health (Allen, 2008; Cooper et al., 2004; Shaver & Mikulincer, 2002). Although attachment working models display relative stability even as adolescents begin the process of attachment reorganization (Buist et al., 2004b), individual differences in attachment models were found to differentially affect who adolescents select for attachment needs (Fraley & Davis, 1997; Freeman & Brown, 2001; Markiewicz et al., 2006), and the relationship between attachment reorganization and psychological adjustment (Mayseless, 2004; Pitman & Scharfe, 2010). The longitudinal influences of attachment models on adolescent wellbeing have already been established in other studies (e.g., Cooper et al., 2004; Kenny et al., 1998; Papini & Roggman, 1992), and thus it is important to additionally account for the effects of attachment expectancies on adolescent adjustment even if no specific hypotheses are made. This will enable a more thorough investigation of the extent to which normative changes in attachment relationships uniquely predict adolescent adjustment.

8.2 Method

8.2.1 Participants

One hundred and ninety-nine adolescents initially participated in the second wave of data collection conducted 12 to 15 months after the first data collection. This constituted a re-participation rate of 38.0% of the original sample of 511 adolescents. Of the 174 participants who successfully completed the second questionnaire, 18 participants could not be matched to their original data for reasons such as non-participation in the first study (i.e., 5), failure to meet age prerequisites (i.e., 5), and incompleteness of the previous questionnaire, (i.e., 7). One participant's data was excluded for being a multivariate outlier in the previous set of analyses. The final sample contained 29 males and 127 females ($N = 156$) with a mean age of 16.80 years ($SD = 2.24$) and ranging between 13.08 years and 20.75 years.

In Wave 2, the 'Early Adolescents' cohort comprised 53 participants (9 males and 44 females) between 13.08 years and 15.50 years of age with a mean age of 13.81 years ($SD = .45$). The 'Late Adolescents' cohort consisted of 103 participants (20 males and 83 females) averaging 18.35 years of age ($SD = .65$), and ranging between 17.17 years to 20.75 years of age. Fifty-six adolescents (35.9%) reported current involvement in a romantic relationship and comprised 4 early adolescents (7.5%) and 52 late adolescents (50.5%). The majority of participants ($n = 113$, 72.4%) lived with both biological parents as reported by 83.0% of early adolescents ($n = 44$) and 67.0% of late adolescents ($n = 69$). Based on demographics collected in Wave 1, the majority of volunteers ($n = 132$, 84.6%) identified themselves as Caucasian Australians and were of middle to upper socio-economic status.

Chi-square analyses revealed that significantly more females (Early Adolescents = 40.4%; Late Adolescents = 34.9%) than males (Early Adolescents = 12.2%; Late Adolescents = 22.2%) re-participated in the second data collection among both early adolescents, $\chi^2(1) = 15.70, p < .001$, and late adolescents, $\chi^2(1) = 4.28, p = .038$. Independent t-tests revealed that early adolescents who re-participated were significantly younger, $t(181) = 3.10, p = .002$, and demonstrated better school attitudes, $t(181) = -2.92, p = .004$, and less depression, $t(181) = 2.00, p = .047$, compared to early adolescents who did not. They also reported higher attachment to mothers overall, $t(181) = -2.23, p = .027$, and particularly for Safe Haven, $t(181) = -2.02, p = .045$, and Separation Protest, $t(107.74) = -2.51, p = .014$. Late adolescents who completed the second questionnaire reported lower attachment to fathers for Secure Base relative to those who did not re-participate, $t(241.91) = 2.77, p = .006$.

8.2.2 Procedure

The second wave of data collection was conducted twelve months later from the period of September 2009 to June 2010. To canvass as many previous volunteers to participate in the follow-up study, an online web survey hosted by SurveyMonkey constituted an alternative to the paper questionnaire utilized previously in the schools. Participants were re-contacted directly using email addresses or telephone numbers provided in the initial assessment phase, with the provision of contact details considered permission to be re-contacted for the follow-up survey. A lottery of one of ten pairs of Hoyts movie tickets was introduced as an incentive, and all questions on the online survey were made compulsory to avoid further attrition of longitudinal data.

An initial email invitation, with a personalized web-link to the online questionnaire to be completed in own time, and two reminder emails were sent approximately a month

apart to participants who provided email addresses. A total of 354 email invitations were sent and comprised 81.0% of the 437 adolescents who completed the first questionnaire in the latter half of 2008. Thirty-one emails bounced and another 9 adolescents opted-out of the second survey. Remaining participants who only supplied telephone numbers were contacted through telephone and if interested, provided the option of completing either the questionnaire online or the paper version of the same survey with all expenses paid. Ten telephone sessions were attempted to contact participants whose emails either bounced or did not previously provide an email address. A further 48 email invitations and 20 survey packages were sent, with 33 adolescents (68.8%) completing the survey online and 9 adolescents (45.0%) returning their completed paper surveys. Questionnaire packages comprised the same information as provided online, and included a debrief summary sheet identical to that at the conclusion of the online survey.

Preliminary data analyses revealed that few early adolescents completed the online follow-up survey, and attempts were made to re-approach the remaining 74 participants in their school in June 2009. Recruitment and administration procedures used was identical to those in the first data collection, with three exceptions being the inclusion of the lottery incentive, a target group comprising previous participants and new volunteers in the same school year, and the utility of the Adolescent Stress Questionnaire (ASQ) excluding the Romantic Relationships subscale. A total of 40 participants (54.1%) completed the second questionnaire using one class period during school hours, and included 5 adolescents who did not participate in Wave 1. The final retention rate was 38.0% and constituted 199 of the 511 adolescents who originally volunteered for the first survey.

The final response rate of 38.0% is similar to that reported by other researchers (e.g., Sills & Song, 2002; Wei et al., 2005) despite several waves of solicitation for the

follow-up survey. The low re-participation rate was unanticipated as several strategies were employed to enhance reparticipation including collecting as much contact information as possible, using a lottery incentive, and several follow-up emails and telephone calls (Boys, Marsden, Stillwell, Hatchings, Griffiths, & Farrell, 2003; Wineman & Durand, 1992). Adolescents are difficult to retain in follow-up research (Boys et al., 2003), with this difficulty compounded by using a web survey where fairly low average response rates (Cook, Heath, & Thompson, 2000) are expected. Administration of the second questionnaire in schools was also not viable as adolescents may have moved or left school, or started university or work (Boys et al., 2003). However, this retention rate was only slightly lower than those reported for health studies in school settings (i.e., from 42% to 95%) (Aten, Siegal, Enaharo, & Auinger, 2002; Villarruel, Jemmott, & Jemmott, 2006).

There is general consensus that losing contact with more than 30% of the original sample (McLellan et al., 1997) can alter the interpretation of study findings (McArdle & Hamagami, 1992). Thus, the low re-participation rate may represent a limitation of the present study with the re-participating adolescents representing a select group, and the results demonstrated may not be generalizable to a broader adolescent population.

8.2.3 Measures

The questionnaire package ‘Youth and Relationships 2010’ comprised most of the measures described in Chapter 6 (see 6.2.3) with one addition made to the ‘Current Lifestyle’ section to reflect the longitudinal nature of the data collected. The ECR-R-GSF (Wilkinson, 2010b) was also excluded from the second survey. The complete inventory of measures is shown in Table 8.1, with the inclusion constituting the last measure.

Table 8.1

Measures of 'Youth and Relationships 2010' Questionnaire Package

Measures
Attachment
The Modified Attachment Network Questionnaire (Doherty & Feeney, 2004)
Psychological Health
Center for Epidemiological Studies Depression Scale (Radloff, 1977)
Self-Liking/Self-Competence Scale- Revised Version (Tarafordi & Swann, 2001)
Adolescent Stress Questionnaire (Byrne, Davenport, & Mazanov, 2007)
Current Lifestyle
School Attitude Scale (Wilkinson & Kraljevic, 2004)
Romantic Status Questions (Appendix J)*

* New inclusions to the 'Youth and Relationships 2010' Questionnaire Package

Romantic Status

Three additional single-item questions were added to the original question assessing current romantic status to reflect potential changes in romantic status in the preceding twelve months. Participants are firstly asked "Did you have your first romantic relationship in the past 12 months?" with responses coded as 'Yes' or 'No'. The number of romantic relationships in the previous year is then assessed with "How many different girlfriends or boyfriends have you had in the last twelve months?". Responses are coded for the number of romantic partners on a 5-point scale from 0 (None) to 4 (More than three). The final question follows the item assessing adolescent romantic status (see 6.2.3.3) and ascertains the presence of the same (versus different) romantic partner from Wave 1. Participants are asked, "Are you still with the same boyfriend/girlfriend from twelve months ago?" and their responses coded as 'Yes' or 'No'.

8.3 Results

8.3.1 Overview

The results of the statistical analyses are divided into the following sections. Firstly, demographic information detailing the general characteristics of the two cohorts of adolescents in Wave 2 and of changes over the preceding twelve months, are presented. Next, preliminary univariate and multivariate checks of all the measures utilized in the second data collection are described. Thirdly, the results describing the composition and changes of the attachment network are presented. Fourthly, the results of the attachment functions analyzed cohort-sequentially twelve months apart are reported. Finally, associations between changes in attachment relationships, global attachment models and psychological health are explored.

8.3.2 Demographic Information

The mean age of the sample was 16.80 years ($SD = 2.24$) and ranged between 13.08 years and 20.75 years. There were 29 males and 127 females. Approximately twice the number of late adolescents as early adolescents participated in the second data collection. The mean age, standard deviations and age range for males and females according to cohort are presented in Table 8.2.

Table 8.2

Means, Standard Deviations, and Range for Age According to Cohort and Sex in Wave 2

	Early Adolescents ($n = 53$)				Late Adolescents ($n = 103$)			
	n	M	SD	Range	n	M	SD	Range
Male	9	13.89	.37	13.50 – 14.67	20	18.70	.89	17.50 – 20.75
Female	44	13.79	.47	13.08 – 15.50	83	18.26	.56	17.17 – 19.83

In the twelve months preceding the second data collection, twenty or 12.8% of adolescents (4 males and 16 females) became involved in a romantic relationship for the first time. Ten early adolescents (4 males and 6 females) and 10 late adolescents (0 males and 10 females) experienced their first romantic relationship in the previous year.

Fifty-nine of all adolescents surveyed (37.8%, 10 males and 49 females) reported no romantic involvement between the two data collections while 97 (62.2%, 19 males and 78 females) adolescents reported the presence of one or more romantic partners over this period. Twice as many early adolescents ($n = 37$) did not report romantic relationships as those who did ($n = 16$). Approximately four times as many late adolescents ($n = 81$) reported romantic involvement in the last twelve months compared to those who had not ($n = 22$). Figure 8.1 presents the distribution of romantic partners in the last year for early and late adolescents according to gender.

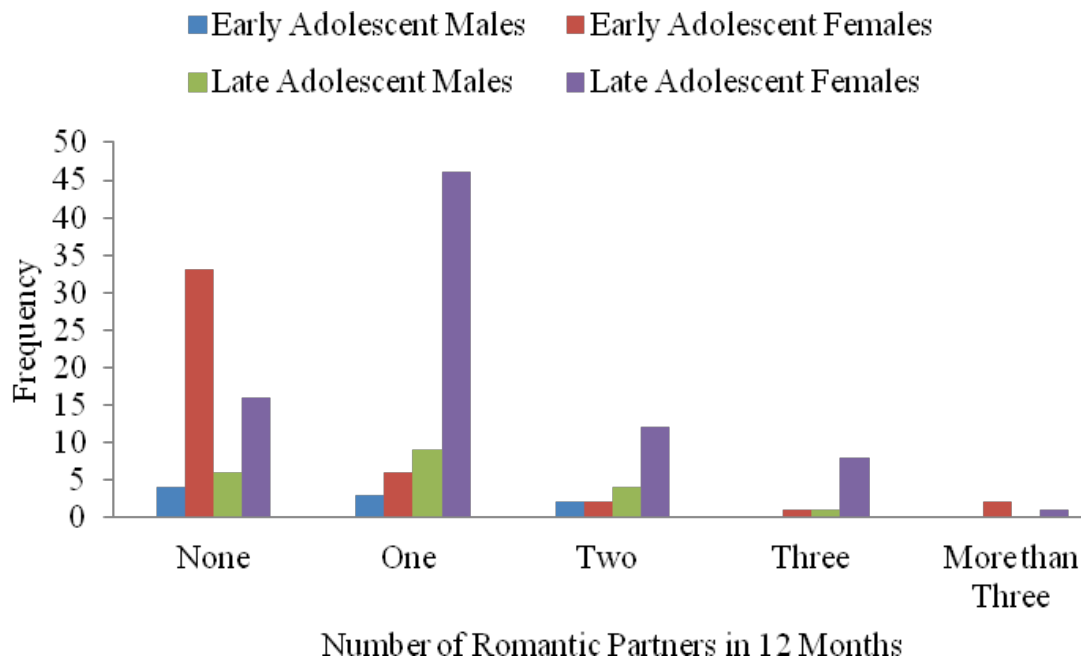


Figure 8.1. Distribution of Romantic Partners in 12 Months According to Cohort and Gender.

The majority of adolescents ($n = 100$, 64.1%) did not report a romantic relationship whereas 56 adolescents (35.9%) reported one of the three relationship categories (see Appendix K). Ten adolescent males (34.5%) and 46 adolescent females (36.2%) reported romantic relationships when recoded into one of the two relationship categories used in Wave 1. A chi-square analysis indicated a significant increase in the proportion of romantically-involved adolescents between the two assessment points, $\chi^2(1) = 13.63$, $p < .001$, with 3 more adolescents reporting romantic partners in Wave 2. Significance testing between early and late romantically-involved adolescents could not be conducted as the assumption of minimum expected cell frequency (i.e., 5 or more) in chi-square analyses was violated for the former (Pallant, 2005). As seen from Figure 8.2, the sample of romantically-involved adolescents is most representative of late adolescent females.

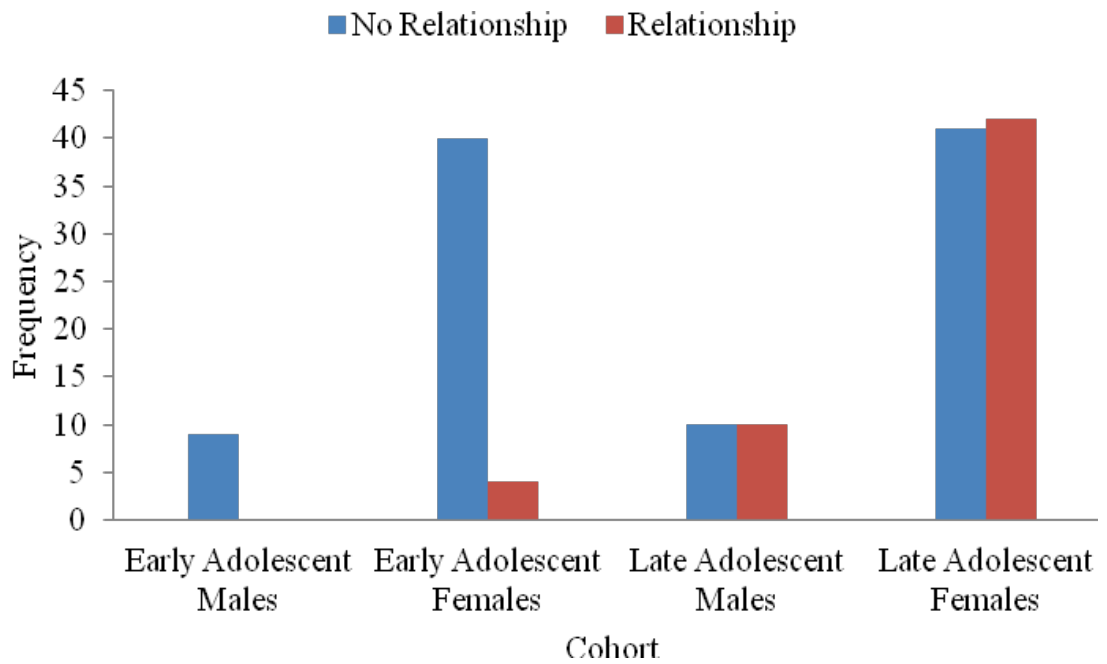


Figure 8.2. Distribution of Romantic Status According to Cohort and Gender in Wave 2.

Thirty-two adolescents (57.1%) in current romantic relationships were involved with the same romantic partner in the preceding twelve months, as reported by 30 late adolescents (57.7%) and 2 early adolescents (50.0%) respectively. A chi-square analysis revealed no significant difference in the proportions of romantically-involved adolescent males ($n = 6$, 60.0%) and females ($n = 26$, 56.5%) who reported the same romantic partner, $\chi^2(1) = .04$, *ns*. Significance testing across the two cohorts of adolescents was not possible due to few early adolescent males and females reporting the same romantic relationship as twelve months ago. The distribution of adolescents reporting the same romantic partner in the last twelve months is found in Table 8.3.

Table 8.3

Distribution of Same Romantic Partner in Twelve Months According to Cohort and Gender

	Frequency Reported (%)		
	Yes	No	Not Applicable
Early Adolescents ($n = 53$)			
Male ($n = 9$)	0 (0.0)	0 (0.0)	9 (100.0)
Female ($n = 44$)	2 (4.5)	2 (4.5)	40 (90.9)
Late Adolescents ($n = 103$)			
Male ($n = 20$)	6 (30.0)	4 (20.0)	10 (50.0)
Female ($n = 83$)	24 (28.9)	18 (21.7)	41 (49.4)
Total ($N = 156$)	32 (20.5)	24 (15.4)	100 (64.1)

8.3.3 Preliminary Checks

Preliminary data checking was conducted to ensure that variables met the assumptions for univariate and multivariate analyses (Tabachnick & Fidell, 2001). The Statistical Package for the Social Sciences Version 19.0 was used for all statistical analyses with data analyzed using inferential statistics applied an alpha level of 0.05 unless otherwise reported.

No missing data was recorded on any of the variables of interest for adolescents who completed the online survey. Missing data was reported on the paper version of the same questionnaire for four measures, and ranged from 1 (0.6%, i.e., CES-D and SLCS) to 10 questions (0.6%, i.e., School Attitude Scale). Missing data was treated similarly to the method described in the cross-sectional study. Similar to Wave 1, the subscale

Romantic Relationships was removed from the ASQ for all participants and is excluded from further analyses.

One univariate outlier was identified for the cohort of late adolescents through the screening of boxplots. This outlier was retained and assigned a value one score above the next non-outlying score in the corresponding distribution (Tabachnick & Fidell, 2001). No multivariate outliers were identified using a $p < .001$ criterion for Mahalanobis distance ($\chi^2(8) = 26.13$).

Transformations were not performed on variables demonstrating deviations of skewness or kurtosis. The current sample size was approximately three times smaller than that of Wave 1, but considered satisfactory and adequately robust against distribution assumption violations (Gravetter & Wallnau, 2000; Stevens, 1996). One hundred and fifty-six cases were retained for further analyses.

The composition of the adolescent sample immediately restricts the type of analyses that can be conducted. Adolescent males are difficult to retain in longitudinal research (Boys et al., 2003), with only 9 early adolescents and 20 late adolescents re-participating in Wave 2. None of the early adolescent males reported a romantic relationship, while only half of the four romantically-involved early adolescent females reported the same romantic partner over the last year. This finding mirrors previous research indicating that less than 20% of early adolescents reported romantic relationships (Connolly et al., 2004; Feiring, 1996). There is insufficient power to conduct complex analyses simultaneously involving the three independent variables of Cohort, Sex, and Romantic Status, and this represents another limitation of the current research.

8.3.4 Attachment Network Composition in Wave 2

Similar to the cross-sectional study, participants nominated up to ten individuals with nominations categorized into one of 13 formal relationship categories introduced earlier. Comparisons regarding the frequency of nominations across the year are detailed in Appendix L.

Overall, an average of 8.23 ($SD = 2.14$) nominations and between 2 to 10 individuals were reported in adolescent attachment networks. Early adolescents reported an average of 9.17 ($SD = 1.31$) nominations and between 6 and 10 individuals in their networks. Similar to Connolly and Johnson (1996), independent samples t-tests revealed late adolescents to nominate significantly less individuals in their attachment networks than did early adolescents, $t(152.65) = 4.88, p < .001$, with an average of 7.75 ($SD = 2.33$) nominations and ranging from 2 to 10 individuals.

Comparison between Wave 1 (see 6.3.4 Figure 6.3) and Wave 2 revealed no significant difference in the size of attachment networks overall, $t(155) = -.65, ns$. Paired-samples t-tests found the network size of early adolescents to be significantly larger than twelve months ago, $t(52) = 3.04, p = .004$. However, the network size of late adolescents was significantly smaller than previously reported, $t(102) = -2.23, p = .03$. The frequency of network sizes reported by both early and late adolescents is illustrated in Figure 8.3.

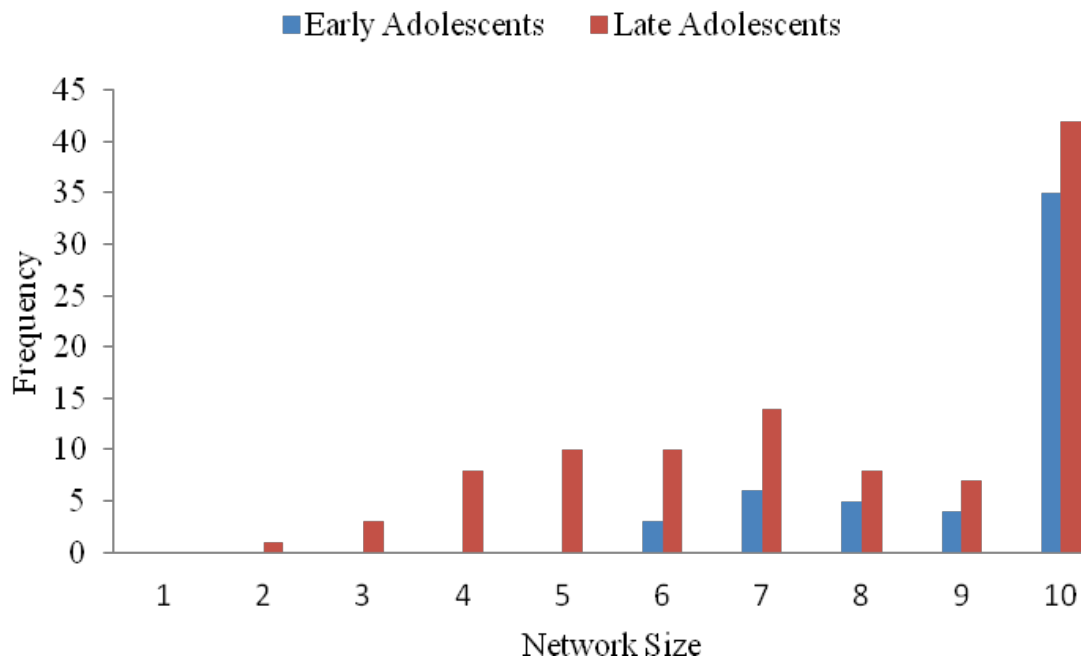


Figure 8.3. Attachment Network Distribution According to Cohort in Wave 2.

Changes in adolescent friendship networks are commonly reported (Cairns et al., 1995; Chan & Poulin, 2007; Degirmencioglu et al., 1998) with only 24 adolescents (15.4%) maintaining all the friends from a year ago in their current friendship networks, and another 28 (17.9%) reporting no previous friends in their existing friendship networks. The majority of adolescents ($n = 150$, 96.2%) reported some change (i.e., loss or gain) to their friendships in Wave 2, with only 6 late adolescents (1 male and 5 females) experiencing no changes in their friendship networks. Over the year, 84.6% ($n = 132$) of adolescents reported an average of 2.45 friends ($SD = 1.77$), or between 0 and 7 friends leaving their friendship network, with 81.4% ($n = 127$) of adolescents reporting an average of 2.52 friends ($SD = 1.93$), or between 0 and 9 friends joining their current friendship network. On average, only 1.90 existing friends ($SD = 1.57$, Range = 0 to 7) remained in the friendship network as reported by 82.1% ($n = 128$) of adolescents in Wave 2. Paired samples *t*-tests, however, revealed no overall differences in friendship network size between both assessment times, $t(155) = .38$, *ns*, irrespective

of age (Early Adolescents: $t(52) = 1.71, ns$; Late Adolescents: $t(102) = -.82, ns$) or gender (Male: $t(28) = -.61, ns$; Female: $t(126) = .79, ns$). The distribution of the friendship network is illustrated in Figure 8.4

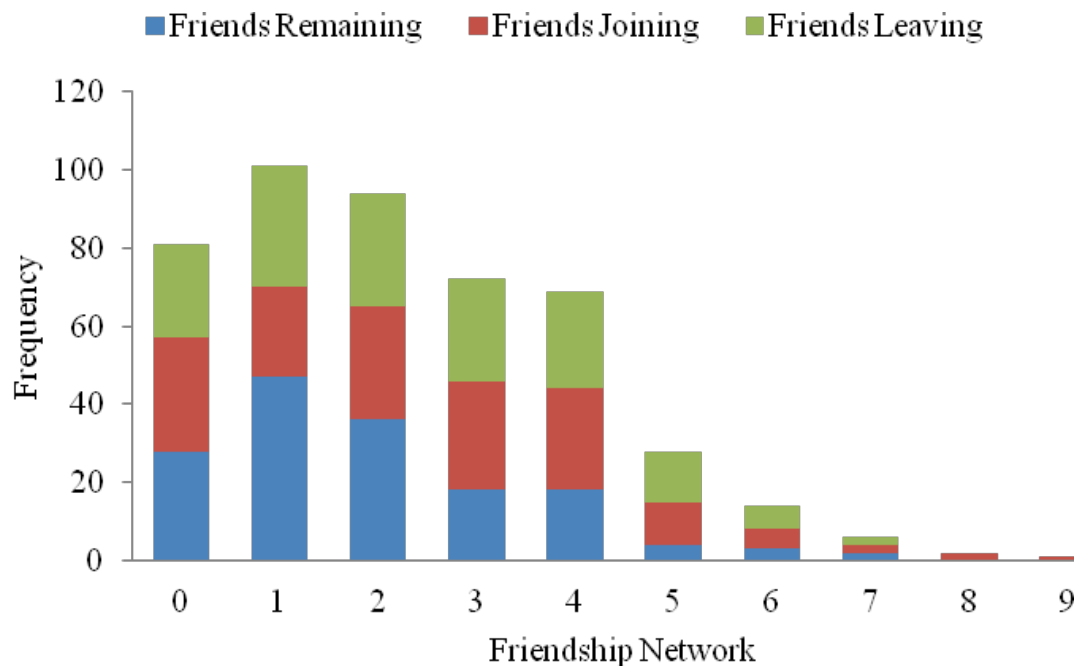


Figure 8.4. Distribution of Friends Remaining, Joining, and Leaving in Adolescents' Attachment Networks

Table 8.4 presents the distribution of friends remaining, joining, and leaving the friendship network according to cohort and gender. Independent samples t-tests conducted between early and late adolescents revealed no significant differences in the number of friends who left, $t(154) = .40, ns$, or remained, $t(154) = -.64, ns$, in the friendship network. Significantly more friends joined the friendship networks of early than late adolescents, $t(154) = 2.72, p = .007$. There were also no significant gender differences in the number of friends who left, $t(154) = -.12, ns$, remained, $t(154) = .55, ns$, or joined, $t(154) = 1.07, ns$. Independent samples t-tests revealed that the number of

friends who left, remained or joined the friendship network was similar for both adolescent males and females irrespective of age.

Friendship networks are postulated to expand most rapidly in early adolescence regardless of gender (Buhrmester, 1990; Connolly & Johnson, 1996) due to the growing importance of the peer group as a social context (O'Brien & Bierman, 1988), and were similarly demonstrated here. Nearly all adolescents (96.2%) in this study reported changes to their friendships networks, consistent with research that found adolescents to preserve less than 65% of their friendship network over one school year (Berndt et al., 1986; Berndt & Hoyle, 1985; Degirmencioglu et al., 1998). Unlike in Parker and Seal (1996), age and gender did not influence the composition of the adolescent friendship network. Overall, these findings accord with reports indicating adolescent friendship networks as fluid and dynamic, and involving a high 'churn factor' wherein friendships are formed, sustained, or split up on a regular basis (Chan & Poulin, 2007).

Table 8.4

Distribution of Friends Remaining, Joining, and Leaving the Friendship Network

	Early Adolescents (<i>n</i> = 53)		Late Adolescents (<i>n</i> = 103)	
	Male (<i>n</i> = 9)	Female (<i>n</i> = 44)	Male (<i>n</i> = 20)	Female (<i>n</i> = 83)
<i>Friends Remaining</i>				
<i>M</i>	1.44	1.86	1.90	1.98
<i>SD</i>	1.81	1.56	1.89	1.48
Mode	0	2	1	1
Range	0 - 5	0 - 6	0 - 7	0 - 7
<i>Friends Joining</i>				
<i>M</i>	2.56	3.20	2.00	2.28
<i>SD</i>	2.13	1.76	1.81	1.97
Mode	0	3	1, 2	0
Range	0 - 5	0 - 9	0 - 7	0 - 8
<i>Friends Leaving</i>				
<i>M</i>	2.22	2.59	2.60	2.36
<i>SD</i>	1.39	1.93	1.79	1.73
Mode	1, 2, 3, 4	3	2	1, 2
Range	0 - 4	0 - 7	0 - 5	0 - 7

8.3.5 Attachment Functions in Wave 2: Overview

Several differences in the rankings of attachment figures between Wave 1 (see 6.3.5 Table 6.3) and Wave 2 were noted. As seen from Table 8.5, romantic partners now replaced mothers at the top of hierarchy as the candidate to whom highest attachment strength was reported despite being nominated by only one-third ($n = 53$) of all adolescents. Romantic partners were nominated by 94.6% ($n = 53$) of romantically-involved adolescents for at least one attachment function regardless of whether this was the same romantic partner as a year ago. In turn, ex-boy/girlfriends now replaced both brothers and other relatives as the attachment figure adolescents used most for attachment needs after sisters.

Similar to previous research, adolescents' attachment hierarchies were found to remain the same across twelve months and comprised primarily of romantic partners (if present), mothers, best friends, friends, and fathers (Doherty & Feeney, 2004; Rosenthal & Kobak, 2010; Trinke & Bartholomew, 1997). A combined Friends category was created using the exact procedure from Wave 1 for the purpose of longitudinal analyses, and because nearly all adolescents reported changes in the composition of their friendship networks. Similar to the cross-sectional study (see 6.3.5 Table 6.5), the mean attachment strength score of this combined Friend category was now higher than that of mothers.

Table 8.5

Distribution of Attachment Figure Nominations and Attachment Strength in Wave 2

Attachment Figure	Frequency ($N = 156$)		
	Attachment	Reported	Not Reported
	Strength $M (SD)$	$f(\%)$	$f(\%)$
Boy/Girlfriend	2.21 (.93)	53 (34.0)	103 (66.0)
combined Friend	1.64 (.90)	144 (92.3)	12 (7.7)
Mother	1.25 (1.01)	122 (78.2)	34 (21.8)
Best Friend	1.19 (1.04)	109 (69.9)	47 (30.1)
Friend	.69 (.76)	100 (64.1)	56 (35.9)
Father	.46 (.65)	77 (49.4)	79 (50.6)
Sister	.29 (.60)	52 (33.3)	104 (66.7)
Ex-Boy/Girlfriend	.13 (.45)	16 (10.3)	140 (89.7)
Brother	.12 (.37)	26 (16.7)	130 (83.3)
Other Relatives	.12 (.40)	21 (13.5)	135 (86.5)
Other Non- Relatives	.03 (.20)	8 (5.1)	148 (94.9)
Non-Persons	.02 (.13)	7 (4.5)	149 (95.5)
Step-Father	.004 (.04)	2 (1.3)	154 (98.7)
Step-Mother	.002 (.02)	1 (.6)	155 (99.4)

8.3.5.1 Changes in Attachment Reorganization: A Priori Analyses

Several a priori hypotheses were specified for the purpose of replicating age differences in attachment strength to attachment targets (i.e., Mother, Father, Friend, and Romantic Partner) across the two times of data collection, and were conducted using an alpha value of $p < .05$. These hypotheses were that (1) early adolescents, but not late adolescents, would demonstrate a decline in overall attachment strength; (2) early adolescents would report higher overall attachment than late adolescents, with gender differences in ratings demonstrated only by the former; and (3) different patterns in utility of attachment figures would be reported as a function of age but not romantic status. As in the cross-sectional study, two sets of analyses were employed with the first set pertaining to all adolescents ($N = 156$) surveyed and excluding romantic partners as attachment targets, and the second set limited to the subset of romantically-involved adolescents ($n = 56$) and including romantic partners as attachment figures. A funnel ‘top-down’ approach was adopted in investigating these a priori hypotheses, and systematically progresses from examining changes in attachment strength reported by all adolescents to that reported by specific subsets of adolescents. For both sets of analyses, the narrowing of focus as the analyses progress allow a continual refinement of the investigation into changes in attachment reorganization that occur for early and late adolescents depending on their gender and romantic status.

8.3.5.2 Entire Adolescent Sample with Three Targets (Mother, Father, and Friend)

Relative to all adolescents ($N = 156$), the aims of the first set of analyses were three-fold. Firstly, changes in overall attachment strength reported to the three attachment targets of mothers, fathers, and friends by early adolescents ($n = 53$) and late

adolescents ($n = 103$) across the two assessment points were examined. Secondly, total attachment strength reported by these two groups of adolescents was investigated longitudinally as a function of gender. Thirdly, changes in attachment strength reported to mothers, fathers, and friends according to age over twelve months were investigated. The mean age of early adolescent males ($n = 9$) and females ($n = 44$) were 13.89 years ($SD = .37$) and 13.79 years ($SD = .47$) respectively. For late adolescent males ($n = 20$) and females ($n = 83$), the mean age was 18.70 years ($SD = .89$) and 18.26 years ($SD = .56$) respectively. Twice as many late adolescents than early adolescents re-participated in the second study, with approximately four times as many females than males. Chi-square analyses revealed no significant differences between early and late adolescent males and females, $\chi^2(1) = .02, ns$.

Paired samples t-tests revealed that overall attachment strength remained unchanged across twelve months for both early adolescents, $t(52) = 1.17, ns$, and late adolescents, $t(102) = 1.81, ns$, with only the latter consistent with predictions made. Means and standard deviations are presented in Table 8.6.

Table 8.6

Means and Standard Deviations of Mean Attachment Strength According to Cohort

	Early Adolescents ($n = 53$)		Late Adolescents ($n = 103$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Wave 1	1.41	.31	1.06	.34
Wave 2	1.35	.41	1.00	.36

To determine if adolescent males and females reported longitudinal differences in attachment strength according to age, a three-way mixed analysis of variance (ANOVA) design of 2 (Time – Wave 1 vs. Wave 2) x 2 (Cohort - Early Adolescents vs. Late Adolescents) x 2 (Sex – Male vs. Female) was conducted with the first factor within-subjects, and the latter two factors between-subjects. Equality of covariance was not violated (Box's $M = 10.96$, *ns*) despite unequal sample sizes upon categorization. There was no significant main effect for either Time, $F(1, 152) = .21$, *ns*, partial $\eta^2 = .001$, or Sex, $F(1, 152) = 2.34$, *ns*, partial $\eta^2 = .015$. A significant main effect was, however, demonstrated for Cohort, $F(1, 152) = 26.24$, $p < .001$, partial $\eta^2 = .147$, with early adolescents ($M = 1.34$, $SE = .06$) reporting higher total attachment strength than late adolescents ($M = 1.00$, $SE = .04$). Means and standard deviations are presented in Table 8.7.

Table 8.7

Means and Standard Deviations of Mean Attachment Strength According to Cohort and Sex in Wave 1 and Wave 2

	Early Adolescents				Late Adolescents			
	Male ($n = 9$)		Female ($n = 44$)		Male ($n = 20$)		Female ($n = 83$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Wave 1	1.25	.30	1.44	.31	.93	.36	1.09	.33
Wave 2	1.33	.61	1.35	.36	.96	.30	1.01	.38

Although paired samples t-tests revealed no significant changes across time in attachment reported by early adolescents for mothers, $t(52) = 1.74$, *ns* ($p = .088$), fathers, $t(52) = 1.88$, *ns* ($p = .066$), and friends, $t(52) = -1.86$, *ns* ($p = .069$), all three approached significance. Specifically, attachment to mothers and fathers were non-

significantly less, and friend attachment non-significantly more in Wave 2 compared with Wave 1. For late adolescents, paired samples t-tests demonstrated that attachment strength to friends significantly decreased across twelve months, $t(102) = 2.15, p = .034$. Both mother attachment, $t(102) = -.46, ns$, and father attachment, $t(102) = .51, ns$, remained unchanged across the two waves of data collection. Means and standard deviations are found in Table 8.8.

Table 8.8

Means and Standard Deviations of Mean Attachment Strength for Target According to Cohort

Target	Mother		Father		Friend	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Early Adolescents ($n = 53$)						
Wave 1	1.96	.86	.96	.75	1.30	.91
Wave 2	1.72	.96	.78	.79	1.54	.83
Late Adolescents ($n = 103$)						
Wave 1	.98	.92	.31	.53	1.89	.89
Wave 2	1.01	.96	.29	.49	1.69	.94

8.3.5.3 Adolescents In a Romantic Relationship Subsample with Four Targets (Mother, Father, Friend, Romantic Partner)

For the subset of romantically-involved adolescents, differences in attachment strength reported to mothers, fathers, friends, and romantic partners over twelve months were investigated. The analyses employing paired samples t-tests systematically progress from a focus on the adolescents reporting romantic relationships in Wave 1 and

Wave 2 ($n = 56$) to the subset of adolescents reporting romantic involvement with the same romantic partner from twelve months ago ($n = 32$), followed by the subset of adolescents reporting different romantic partners one year later ($n = 24$). In Wave 2, none of the early adolescent males reported romantic partners with only half of the four romantically-involved early adolescent females reporting the same romantic partner in the preceding twelve months. Analyses involving romantic partners therefore centre solely on late adolescents ($n = 52$) due to insufficient power to conduct comparisons across cohorts. Independent samples t-tests revealed no significant differences in age, $t(50) = -.63, ns$, or attachment strength to romantic partners, $t(50) = -1.70, ns$, between late adolescents with the same romantic partner and those who reported a different romantic partner in Wave 2. Means, standard deviations, and age range for adolescents with romantic partners are shown in Table 8.9.

Table 8.9

Means, Standard Deviations and Range for Age According to Cohort and Romantic Status

Late Adolescents	<i>N</i>	<i>M</i>	<i>SD</i>	Range
All Romantic Partners	52	18.24	.65	17.33 – 19.92
Same Romantic Partner	30	18.29	.67	17.33 – 19.92
Different Romantic Partner	22	18.17	.63	17.33 – 19.83

For the broad subset of romantically-involved late adolescents, paired samples t-tests revealed that attachment strength to romantic partners significantly increased between Wave 1 and Wave 2, $t(51) = -5.78, p < .001$, regardless of who the romantic partner was or the length of the romantic relationship. A significant reduction in attachment strength to friends was reported, $t(51) = 3.36, p = .001$, whereas attachment to mothers, $t(51) = -$

.52, *ns*, and fathers, $t(51) = 1.43$, *ns*, remained unchanged across twelve months. Means and standard deviations for romantically-involved late adolescents are found in Table 8.10.

Table 8.10

Means and Standard Deviations of Mean Attachment Strength for Target for Adolescents with Romantic Partners in Wave 1 and Wave 2

Target	Mother		Father		Friend		Romantic Partner	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Adolescents with Romantic Partner ($n = 52$)								
Wave 1	.84	.81	.30	.57	1.81	.91	1.23	1.30
Wave 2	.90	.84	.22	.41	1.42	.85	2.33	.81

Next, paired samples t-tests revealed a significant increase in attachment strength reported to romantic partners, $t(29) = -2.88$, $p = .007$, and a corresponding decrease in attachment strength reported to friends, $t(29) = 2.66$, $p = .013$, for the subsample of late adolescents with the same romantic partner over twelve months. As hypothesized, attachment reported to mothers, $t(29) = -1.71$, *ns*, and fathers, $t(29) = -.31$, *ns*, remained stable across the year. Means and standard deviations for the subset of late adolescents with the same romantic partner over twelve months are presented in Table 8.11.

Table 8.11

Means and Standard Deviations of Mean Attachment Strength for Target for Adolescents with Same Romantic Partner in Wave 1 and Wave 2

Target	Mother		Father		Friend		Romantic Partner	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Adolescents with Same Romantic Partner (<i>n</i> = 30)								
Wave 1	.72	.82	.20	.44	1.73	.90	1.74	1.27
Wave 2	.93	.88	.21	.45	1.32	.91	2.49	.69

Focusing instead on the subset of romantically-involved adolescents who reported a different romantic partner relative to twelve months ago, paired samples t-tests revealed a significant increase in the amount of attachment reported to romantic partners, $t(21) = -6.38, p < .001$. Attachment to mothers, $t(21) = 1.09, ns$, and fathers, $t(21) = 1.97, ns$, remained similar between Wave 1 and Wave 2, with a non-significant decline in reported attachment strength to friends, $t(21) = 2.01, ns (p = .058)$. Table 8.12 depicts the means and standard deviations for the subset of adolescents with different romantic partners.

Table 8.12

Means and Standard Deviations of Mean Attachment Strength for Target for Adolescents with Different Romantic Partner in Wave 1 and Wave 2

Target	Mother		Father		Friend		Romantic Partner	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Adolescents with Different Romantic Partner (<i>n</i> = 22)								
Wave 1	1.00	.80	.45	.69	1.91	.94	.53	.98
Wave 2	.84	.81	.23	.37	1.55	.76	2.11	.91

8.3.5.4 Attachment Reorganization Over Time

To investigate the longitudinal process of attachment reorganization, the current study firstly distinguished adolescents who demonstrated a normative reorientation of attachment functions from parents to peers from those who deviated from this proposed sequence. As outlined earlier in this chapter, attachment theory posits that adolescents expand their attachment networks and increasingly turn to friends and romantic partners for attachment needs as they mature. Thus, differences in network size and in attachment strength to mothers, friends, and romantic partners (if present) from Wave 1 to Wave 2 were calculated. Fathers were omitted as a grouping variable as they are generally used least as a target of attachment (Freeman & Brown, 2001; Markiewicz et al., 2006; Trinke & Bartholomew, 1997).

Initial attempts to categorize adolescents according to changes (i.e., increase, decrease, or constant) reported in attachment strength to mothers and friends, and network size resulted in nine permutations without additionally accounting for changes in partner attachment for adolescents with romantic relationships in Wave 1 and/or

Wave 2. Changes (if any) in the movement of attachment occurred either from mothers to friends or from friends to mothers, and network size did not increase for all adolescents. This difficulty in categorizing adolescents suggests that the sequential movement of attachment functions proposed by Hazan and Zeifman (1994, 1999) is likely not supported in this longitudinal study, but rather that attachment formation to peers may still be ongoing in middle to late adolescence (Friedlmeier & Granqvist, 2006).

Change in network size was subsequently dropped as a grouping variable, and criteria instead centred on the changes posited to occur as adolescents reorient from parents to peers for attachment needs (Bowlby, 1969/1982; Hazan & Zeifman, 1999). Adolescents were now categorized into either group of 'Normative/Stable' or 'Contracted' according to changes (i.e., increase, decrease, or constant) in attachment strength to mothers, friends, and romantic partners (if applicable) reported across twelve months (see Table 8.13). Adolescents who were not romantically-involved throughout the study were categorized by comparing changes in Friend Strength to that in Mother Strength. Adolescents who reported previous or current romantic partners were defined according to changes in Partner Strength relative to changes in Mother Strength. For example, an adolescent who reported an increase in Friend Strength but a decrease in Mother Strength would be categorized as "Normative/Stable" whereas an adolescent reporting a decrease in Partner Strength and constant Mother Strength would be labeled as "Contracted".

Table 8.13

Criteria for Categorization for Change in Attachment Relationships

Group	Definition for Categorization
Normative/ Stable	(=/ \uparrow FrS or =/ \uparrow PS, and \downarrow MoS) or (\uparrow FrS or \uparrow PS, and = MoS) or (= FrS or = PS, and = MoS) or (\uparrow FrS or \uparrow PS, and \uparrow MoS)
Contracted	(\downarrow FrS or \downarrow PS, and =/ \uparrow MoS) or (= FrS or = PS, and \uparrow MoS) or (\downarrow FrS or \downarrow PS, and \downarrow MoS)

Note. FrS = Friend Strength, PS = Partner Strength, MoS = Mother Strength, '=' = Constant, ' \uparrow ' = Increase, and ' \downarrow ' = Decrease.

The distribution of early and late adolescents in each group according to sex and change in romantic status (i.e., between Wave 1 and Wave 2) is shown in Table 8.14. Overall, 90 adolescents (57.7%) reported a normative/stable reorientation of attachment functions from mothers to peers with another 66 adolescents (42.3%) revealing a contraction or “backtransfer” movement of attachment functions. Among the early adolescents, 27 females (61.4%) and 3 males (33.3%) were categorized as ‘Normative/Stable’, with 17 females (38.6%) and 6 males (66.6%) categorized as ‘Contracted’. For late adolescents, 50 females (60.2%) and 10 males (50.0%) fitted the ‘Normative/Stable’ category whereas 33 females (39.8%) and 10 males (50.0%) were labeled as ‘Contracted’. Chi-square analyses revealed no significant differences in the proportion of early and late adolescents, ($\chi^2(1) = .001, p = .98$), and of male and female adolescents, ($\chi^2(1) = 1.81, p = .18$), in each of the two groups.

Table 8.14

Distribution of All Adolescents According to Cohort, Sex, and Change in Romantic Status

Frequency	Early Adolescents ($n = 53$)		Late Adolescents ($n = 103$)	
	Male (%)	Female (%)	Male (%)	Female (%)
No Romantic Partner at Wave 1 and Wave 2 ($n = 77$)				
Normative/Stable	3 (33.3)	23 (52.3)	5 (25.0)	15 (18.1)
Contracted	3 (33.3)	14 (31.8)	2 (10.0)	12 (14.5)
Romantic Partner at Wave 1, No Romantic Partner at Wave 2 ($n = 23$)				
Normative/Stable	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Contracted	3 (33.3)	3 (6.8)	3 (15.0)	14 (16.9)
No Romantic Partner at Wave 1, Romantic Partner at Wave 2 ($n = 24$)				
Normative/Stable	0 (0.0)	2 (4.5)	4 (20.0)	18 ((21.7)
Contracted	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Romantic Partner at Wave 1 and Wave 2 ($n = 32$)				
Normative/Stable	0 (0.0)	2 (4.5)	1 (5.0)	17 (20.5)
Contracted	0 (0.0)	0 (0.0)	5 (25.0)	7 (8.4)

To determine if global attachment models had differential effects on the longitudinal changes in attachment reorientation, a one-way Analysis of Variance (ANOVA) was conducted with Attachment Change (Normative/Stable vs. Contracted) as the independent variable and Anxiety and Avoidance as the dependent variables. Analyses were conducted using all adolescent surveyed ($N = 156$). Homogeneity of variance was not violated for either Anxiety or Avoidance. Contrary to predictions, Anxiety, $F(1, 154) = .25$, *ns*, and Avoidance, $F(1, 154) = .37$, *ns*, were not found to differentially

influence longitudinal changes in attachment relationships. Means and standard deviations are found in Table 8.15.

Table 8.15

Means and Standard Deviations for Anxiety and Avoidance According to Attachment Change for All Adolescents

	<i>N</i>	Anxiety		Avoidance	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Normative/Stable	90	26.35	7.57	27.21	7.44
Contracted	66	26.97	7.70	26.50	6.93
Total	156	26.61	7.61	26.91	7.21

8.3.5.5 Overall Summary

Overall, declines in total attachment strength reported to mothers, fathers, and friends between the two waves of data collection were not statistically significant for either early or late adolescents, with the former contrary to predictions made. While early adolescents continued to report higher overall attachment strength than late adolescents in Wave 2, there were no indications of disparity in attachment ratings between adolescent males and females for either age group over twelve months. However, examinations at the level of attachment targets revealed trends in who adolescents were using for attachment needs. Consistent with attachment theory, there was evidence supporting a shifting of attachment needs away from mothers and fathers towards friends throughout adolescence. Increased attachment to romantic partners corresponded to a decrease in attachment to friends, with partner attachment demonstrated to increase regardless of whether the same or different romantic partner

was reported between the two assessment points. The longitudinal process of attachment reorganization could not fully be confirmed, with a significant minority demonstrating a “backtransference” of attachment. Attachment expectancies also did not differentially affect the process of attachment reorientation longitudinally.

8.3.6 Adolescent Adjustment Descriptive Statistics in Wave 2

Table 8.16 presents the descriptive statistics of the four indices of adolescent adjustment after twelve months. All variables were normally distributed aside from Depression which was skewed towards fewer symptoms especially among early adolescents. This variable was expected in a non-clinical population and not transformed (Pallant, 2005). Scores for School Attitude were obtained for only 79 late adolescents (76.7%, 14 males and 65 females) as the remaining 24 late adolescents (23.3%, 6 males and 18 females) had completed their high school education but not yet commenced further education in the year since the first data collection.

Table 8.16

Means, Standard Deviations, and Range for Adolescent Adjustment Variables in Wave 2

		Early Adolescents (<i>n</i> = 53)			Late Adolescents (<i>n</i> = 103)		
		(Males = 9, Females = 44)			(Males = 20, Females = 83)		
		<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Depression	Male	14.11	3.52	11-22	18.55	5.59	11-29
	Female	16.55	5.48	10-31	20.42	6.04	10-37
	Total	16.13	5.26	10-31	20.06	5.98	10-37
Self-esteem	Male	56.67	4.66	51-64	52.95	11.54	38-75
	Female	54.52	10.19	33-75	47.64	9.84	26-73
	Total	54.89	9.48	33-75	48.67	10.35	26-75
Stress	Male	43.22	11.94	21-56	37.95	9.91	19-55
	Female	42.91	11.93	16-62	49.00	8.89	26-67
	Total	42.96	11.81	16-62	46.85	10.05	19-67
School Attitude*	Male	29.56	4.39	25-39	28.07	4.51	20-38
	Female	28.98	4.47	19-38	29.23	3.55	22-38
	Total	29.08	4.42	19-39	29.03	3.73	20-38

* For School Attitude, the number of late adolescent males and females are 14 and 65 respectively.

A two-way between-subjects multivariate analysis of variance (MANOVA) was conducted to examine the effects of demographics on adolescent wellbeing with Cohort (Early Adolescents vs. Late Adolescents) and Sex (Male vs. Female) as the independent variables, and Depression, Self-esteem, Stress, and School Attitude as the dependent variables. Analysis with Romantic Status as an independent variable was omitted as there were insufficient romantically-involved early adolescents (i.e., 0 males and 4 females) to meet the assumption of minimum case frequency per cell for MANOVA

(Pallant, 2005). The MANOVA was conducted with only 132 adolescents as self-reports for School Attitude were not obtained for 24 late adolescents. Categorization according to Cohort and Sex resulted in unequal sample sizes but equality of covariance was not violated (Box's $M = 43.84, p = .138$) and a $p < .05$ level of significance was adopted. Means and standard deviations for the adolescent wellbeing variables in Wave 2 are depicted in Table 8.17.

Table 8.17

Means and Standard Deviations for the Adolescent Adjustment Variables According to Cohort and Sex for the Subset of 132 Adolescents

		Early Adolescents (n = 53) (Males = 9, Females = 44)		Late Adolescent (n = 79) (Males = 14, Females = 65)	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Depression	Male	14.11	3.52	18.79	5.69
	Female	16.55	5.48	20.42	5.77
Self-esteem	Male	56.67	4.66	52.36	11.31
	Female	54.52	10.19	47.89	9.75
Stress	Male	43.22	11.94	37.07	10.79
	Female	42.91	11.93	49.60	8.90
School	Male	29.56	4.39	28.07	4.51
Attitude	Female	28.98	4.47	29.23	3.55

Results revealed a significant main effect of Cohort, $F(4, 125) = 3.28, p = .014$, Pillai's Trace = .095, partial $\eta^2 = .095$, that was further qualified by a significant Cohort by Sex two-way interaction, $F(4, 125) = 2.93, p = .024$, Pillai's Trace = .086, partial η^2

= .086. The main effect for Sex was not statistically significant, $F(4, 125) = 2.12, p = .082$, Pillai's Trace = .063, partial $\eta^2 = .063$, unlike in Wave 1 (see 7.3.2).

8.3.6.1 Main Effects

Cohort

Follow-up univariate F tests conducted revealed a significant main effect of Cohort for Depression, $F(1, 128) = 10.73, p = .001$, partial $\eta^2 = .077$, with late adolescents ($M = 19.60, SE = .82$) reporting more depressive symptoms than early adolescents ($M = 15.33, SE = 1.02$). The main effect of Cohort on Self-esteem, $F(1, 128) = 5.60, p = .019$, partial $\eta^2 = .042$, was not statistically significant unlike a year ago. Similar to Wave 1 (see 7.3.2.1), there were no significant main effects of Cohort on Stress, $F(1, 128) = .01, p = .91$, partial $\eta^2 = .000$, or School Attitude, $F(1, 128) = .42, p = .52$, partial $\eta^2 = .003$.

8.3.6.2 Two-way Interactions

Cohort by Sex

As seen from Figure 8.4, a significant Cohort by Sex interaction revealed that reports of stress by adolescent males and females differed according to age, $F(1, 128) = 6.91, p = .01$, partial $\eta^2 = .051$. Means and standard deviations for Stress are presented in Table 8.18. Akin to twelve months ago (see 7.3.2.2), no interactive effects between Cohort and Sex were demonstrated for other variables of Depression, $F(1, 128) = .10, p = .76$, partial $\eta^2 = .001$, Self-esteem, $F(1, 128) = .25, p = .62$, partial $\eta^2 = .002$, and School Attitude, $F(1, 128) = .84, p = .36$, partial $\eta^2 = .007$.

Post-hoc independent samples t-tests using a Bonferroni adjustment of $p = .013$ (i.e., $.05/4$) revealed that late adolescent females endorsed more stress than early adolescent

females, $t(74.42) = -3.17, p = .002$, whereas self-reports of stress did not significantly differ between early and late adolescent males, $t(21) = 1.28, ns$. Similar to Wave 1, early adolescent males and females did not significantly differ on their stress levels, $t(51) = -.07, ns$, whilst late adolescent females indicated significantly higher stress than late adolescent males, $t(77) = 4.60, p < .001$.

Table 8.18

Means and Standard Deviations for Stress for Sex According to Cohort for the Subset of 132 Adolescents

Sex	Early Adolescents ($n = 53$)			Late Adolescents ($n = 79$)		
	n	M	SD	n	M	SD
Male	9	43.22	11.94	14	37.07	10.79
Female	44	42.91	11.93	65	49.60	8.90

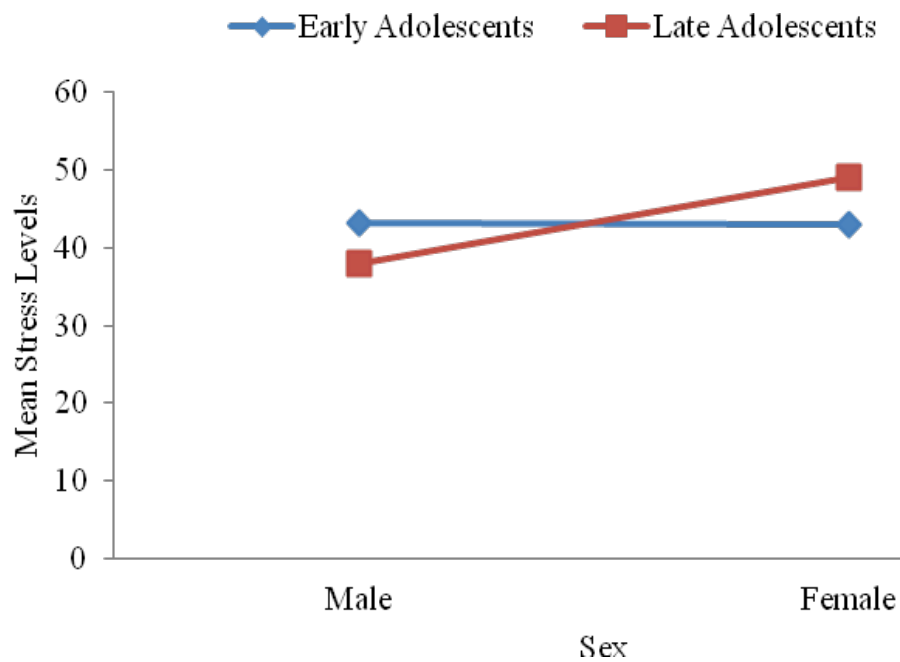


Figure 8.4. Mean Stress Levels for Sex According to Cohort for All Adolescents in Wave 2.

8.3.6.3 Comparisons of Adolescent Adjustment Over Time

Means and standard deviations of the four adjustment indices in Wave 1 and Wave 2 are presented in Table 8.19. Excluding School Attitude ($n = 132$), analyses conducted involved all adolescents ($N = 156$) who re-participated in the follow-up study. Paired samples t-tests revealed no significant difference in overall adjustment scores for Depression, $t(155) = -.18, ns$, Self-esteem, $t(155) = -.61, ns$, Stress, $t(155) = .11, ns$, and School Attitude, $t(131) = .40, ns$, after twelve months. Subsequent paired-sample t-tests revealed that adolescent wellbeing did not significantly vary across time as a function of age or gender (see Appendix M).

Table 8.19

Means and Standard Deviations for the Adolescent Adjustment Variables for All Adolescents Over Time

	Depression ($N = 156$)		Self-esteem ($N = 156$)		Stress ($N = 156$)		School Attitude ($n = 132$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Wave 1	18.63	6.21	50.35	11.86	45.63	11.59	29.17	3.78
Wave 2	18.72	6.02	50.78	10.46	45.53	10.81	29.05	4.01

8.3.7 Intercorrelations between Demographics, Attachment Variables, and Adolescent Adjustment (Wave 1 and Wave 2)

Next, Pearson correlations were employed to determine if the relationships between demographics (Age and Sex), Attachment Change (Normative/Stable and Contracted), Attachment Model (Anxiety and Avoidance), and Adolescent Adjustment in both Wave 1 and Wave 2 (Depression, Self-esteem, Stress, and School Attitude) were in the expected directions. Intercorrelations were conducted for all adolescents ($N = 156$) who participated in the second data collection, with relationships established with School Attitude in Wave 2 reported for the subset of adolescents ($n = 132$) still studying at the second point of assessment.

As in the earlier cross-sectional study, two sets of intercorrelations are summarized independently for clarity of presentation. The first set comprises the relationships between demographics and all the other variables, and the second set contains the relationships between the measures of adolescent wellbeing at both waves of data collection and all the attachment variables. All intercorrelations were interpreted in accordance with the guidelines proposed by Cohen (1988) for small ($r < .03$), medium ($.3 > r < .5$), and large ($r > .5$) effect sizes.

8.3.7.1 Intercorrelations between Demographics and Attachment Change, Adolescent Adjustment (Wave 1 and Wave 2), and Attachment Model

Table 8.20 presents the intercorrelations between demographics and Attachment Change, Attachment Model, and Adolescent Adjustment (Wave 1 and Wave 2). Pearson correlations revealed that the expected associations between Age and both Depression and Self-esteem became weaker over time, with the strength of association reducing

from moderate to small. Age initially demonstrated a small inverse relationship with School Attitude but did not evince a relationship by Wave 2. Sex continued to be weakly and negatively related to Stress, suggesting that female adolescents still reported higher stress levels. Despite demonstrating similar strength of association as in Wave 1 (see 7.3.3.1 Table 7.6), no correlations were established between Sex and Depression or Self-esteem at both assessment times.

As expected from the attachment literature, there were no significant intercorrelations between the demographic variables and the Attachment Model variables.

Table 8.20

Intercorrelations Between Demographics, and Variables of Attachment Change, Attachment Model and Adolescent Adjustment (Wave 1 and Wave 2)

	Age	Sex
Attachment Change	-.01	.12
Anxiety	.07	.04
Avoidance	.15	.09
Depression W1	.35**	-.15
Depression W2	.27**	-.12
Self-esteem W1	-.31**	.13
Self-esteem W2	-.23**	.15
Stress W1	.10	-.21**
Stress W2	.11	-.26**
School Attitude W1	-.20*	-.08
School Attitude W2	.04	-.05

Note. W1= Wave 1, W2 = Wave 2.

* $p < .05$. ** $p < .01$.

8.3.7.2 Intercorrelations between Attachment Change, Attachment Model, and Adolescent Adjustment (Wave 1 and Wave 2)

Intercorrelations between the Attachment Change, Attachment Model, and Adolescent Adjustment (Wave 1 and Wave 2) variables are found in Table 8.21. Contrary to expectations, no significant relationships were established between Attachment Change and any of the Adolescent Model or Adolescent Adjustment variables.

Correlations between the adjustment variables in Wave 2 revealed small to large relationships in the theorized directions. Increases in Self-esteem and School Attitude were negatively linked to Depression and Stress. All adjustment variables demonstrated strong positive correlations with their own scores in Wave 1. Relationships between the adjustment variables across time exhibited small to large associations in the expected directions, with Self-esteem and School Attitude positively related to decreases in Depression and Stress. Correlations between the four preexisting wellbeing indices for the subset of re-participating adolescents were similar to those described in Wave 1 (see 7.3.3.2 Table 7.7) and are not replicated here to avoid redundancy.

Attachment models demonstrated small to medium relationships with all aspects of Adolescent Adjustment in Wave 2, except for the lack of correlation between Avoidance and Stress. As hypothesized, higher Anxiety and Avoidance were positively linked to Depression and Stress, and negatively related to Self-esteem and School Attitude. Anxiety was generally more strongly associated with all the wellbeing variables in Wave 2, than was Avoidance. Intercorrelations between attachment models and the original Adolescent Adjustment indices for this subset of adolescents were similar to that previously established (see 7.3.3.2 Table 7.7) and are not repeated in this section.

Table 8.21

Intercorrelations Between Attachment Change, Attachment Model, and Adolescent Adjustment (Wave 1 and Wave 2)

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Attachment Change	Depression W1	Depression W2	Self-esteem W1	Self-esteem W2	Stress W1	Stress W2	School Attitude W1	School Attitude W2	Anxiety	Avoidance
1.	1.42 (.50)									
2.	-.03	18.63 (6.21)								
3.	.09	.50**	18.72 (6.02)							
4.	.03	-.68**	50.35 (11.86)							
5.	.003	-.53**	-.64**	.70**	50.78 (10.46)					
6.	.09	.47**	.34**	-.38**	45.63 (11.59)					
7.	.06	.40**	.44**	-.37**	.55**	45.53 (10.81)				
8.	-.01	-.49**	-.24**	.63**	-.38**	-.19*	28.92 (3.72)			
9.	.16	-.26**	-.27**	.39**	-.27**	-.23**	.58**	29.05 (4.01)		
10.	.04	.55**	.34**	-.62**	.41**	.32**	-.50**	-.32**	26.61 (7.61)	
11.	-.05	.36**	.23**	-.43**	.08	.12	-.40**	-.34**	.48**	26.91 (7.21)

Note. W1 = Wave 1, W2 = Wave 2, means and standard deviations placed in the diagonal. Shaded areas indicate correlations described previously

elsewhere.

* $p < .05$, ** $p < .01$.

8.3.8 Changes in Attachment Relationships and Adolescent Adjustment

Four hierarchical multiple regressions (HMRs) were conducted separately on each of the four Adolescent Adjustment measures (Depression, Self-esteem, Stress, and School Attitude) to determine the effect of changes in attachment relationships on adolescent wellbeing in Wave 2. The HMRs also investigated the influences of attachment expectancies on adolescent psychological health after controlling for demographic variables and pre-existing levels on each different index of adolescent adjustment. Analyses conducted involved all adolescents ($N = 156$) surveyed for the follow-up study.

Independent variables were entered into the regression equation in a predefined order containing four steps. Potential confounds of Age and Sex were controlled for as covariates and entered in the first step for all regression equations. Attachment Change was entered in the second step to determine the impact of changes in attachment relationships on adolescent wellbeing. Attachment Model (Anxiety and Avoidance) were simultaneously entered in the third step to explore the additional influences of attachment models on adolescent adjustment. Finally, the previous score in Wave 1 for each wellbeing measure was entered in the fourth step to control for pre-existing levels of adolescent adjustment.

All the assumptions required for a multiple regression analysis were met. The total sample size was sufficient for an analysis using six predictors (i.e., 15 subjects per predictor, Tabachnick & Fidell, 2001). One multivariate outlier was identified using a $p < .001$ criterion for Mahalanobis distance ($\chi^2(6) = 22.46$). It was retained as examination using Cook's distance established its influence as less than 1.0 and standardized residuals were between -3.61 to +3.35. Normality, linearity, and lack of

homoscedasticity and collinearity were within acceptable limits as established through residual scatter plots.

8.3.8.1 Prediction of Depression Over Time

In the first step, the demographics accounted for 9.20% of the variance in Depression in Wave 2, and the overall model was significant, $F(2, 153) = 7.73, p = .001$. Age attained a significant beta weight indicating that being older was suggestive of higher depression at the second time of assessment (see Table 8.22).

Attachment Change was entered in step two, and explained an additional non-significant percentage of the variance in Depression. Model two was however still significant, $F(3, 152) = 5.93, p = .001$. Age continued to be a significant predictor with Sex achieving a significant beta coefficient in model two. Age was a bigger contributor than Sex.

Model three was significant, $F(5, 150) = 8.14, p < .001$, with step three predicting a further 10.90% of the variance in Depression. Age and Sex retained their significance with Anxiety attaining a significant beta coefficient in the third step. Anxiety made the largest contribution followed by Age, then Sex.

The fourth step predicted an additional 7.30% of the total variance in Depression in Wave 2, with model four also significant, $F(6, 149) = 9.95, p < .001$. With its entry in the fourth step, pre-existing scores on Depression became the only significant contributor of Depression scores in Wave 2 with the previous three variables losing their significance.

Table 8.22

*Summary of Hierarchical Regression Analyses for Variables Predicting Depression
Over Twelve Months*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	.75	.21	.28***		
Sex	-2.27	1.19	-.15	.09**	.09**
Step 2					
Age	.76	.21	.28***		
Sex	-2.50	1.20	-.16*		
Attachment Change	1.40	.94	.12	.11**	.01
Step 3					
Age	.68	.20	.25**		
Sex	-2.73	1.13	-.18*		
Attachment Change	1.31	.89	.11		
Anxiety	.23	.07	.29**		
Avoidance	.06	.07	.07	.21***	.11***
Step 4					
Age	.37	.21	.14		
Sex	-1.56	1.12	-.10		
Attachment Change	1.37	.85	.11		
Anxiety	.09	.07	.11		
Avoidance	.03	.07	.04		
Depression W1	.35	.09	.36***	.29***	.07***

* $p < .05$. * $p < .01$. *** $p < .001$.

8.3.8.2 Prediction of Self-esteem Over Time

Step one revealed that Age and Sex predicted 8.30% of the variance in Self-esteem in Wave 2, and that the overall model was significant, $F(2, 153) = 6.92, p = .001$. As seen in Table 8.23, Age and Sex both achieved significant beta coefficients revealing that being younger and male related to higher levels of Self-esteem. Age was the larger contributor between the two variables.

Model two was significant, $F(3, 152) = 4.61, p = .004$, despite Attachment Change not being a significant predictor or explaining any further variance in Self-esteem in step two. Age and Sex retained their significance in the second model with the former continuing to account for more of the variance in Self-esteem.

The third step was significant, $F(5, 150) = 14.47, p < .001$, and accounted for a further 24.20% of predicted variance in Self-esteem. Whilst Age and Sex maintained their significance, Anxiety and Avoidance attached significant beta coefficients in model three. Anxiety was the biggest predictor followed jointly by Avoidance and Sex, and lastly by Age.

Self-esteem scores in Wave 1 were entered in model four, $F(6, 149) = 25.17, p < .001$, and explained an additional 17.80% of the variance in Self-esteem at the second assessment time. Its entry in the fourth step resulted in all previous predictors losing their significance, with Self-esteem in Wave 1 achieving a significant beta coefficient and comprising the sole contributor to predicted variance in Self-esteem in Wave 2.

Table 8.23
*Summary of Hierarchical Regression Analyses for Variables Predicting Self-esteem
 Over Twelve Months*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	-1.15	.36	-.25**		
Sex	4.64	2.08	.17*	.08**	.08**
Step 2					
Age	-1.15	.37	-.25**		
Sex	4.72	2.11	.18*		
Attachment Change	-.47	1.65	-.02	.08**	.00
Step 3					
Age	-.91	.32	-.19**		
Sex	5.46	1.82	.20**		
Attachment Change	-.41	1.43	-.02		
Anxiety	-.51	.11	-.37***		
Avoidance	-.29	.11	-.20*	.33***	.24***
Step 4					
Age	-.16	.29	-.04		
Sex	2.52	1.62	.09		
Attachment Change	-.67	1.23	-.03		
Anxiety	-.06	.11	-.04		
Avoidance	-.16	.10	-.11		
Self-esteem W1	.53	.07	.60***	.50***	.18***

* $p < .05$. ** $p < .01$. *** $p < .001$.

8.3.8.3 Prediction of Stress Over Time

The demographic variables explained 8.80% of the variance in Stress in Wave 2, and the overall model was significant, $F(2, 153) = 7.35, p = .001$, in step one. Sex attained a significant beta coefficient indicating that females were more likely to endorse Stress symptoms at the second assessment time (see Table 8.24).

Model two was significant, $F(3, 152) = 5.44, p = .001$, although the addition of Attachment Change in the second step was not significant and contributed a non-significant percentage of explained variance in Stress. Sex maintained its significance and was the sole predictor of Stress in the second model.

Step three predicted a further 10.2% of the total variance in Stress and the third model was significant, $F(5, 150) = 7.47, p < .001$. Sex maintained its significance whilst Anxiety achieved a significant beta coefficient in the third step. Anxiety was a larger predictor than Sex.

The fourth model was significant, $F(6, 149) = 13.50, p < .001$, and accounted for an additional 15.30% of variance in Stress in Wave 2. Sex again maintained its significance with Stress in Wave 1 achieving a significant beta coefficient in the fourth step. Pre-existing scores of Stress was a bigger contributor of Stress in Wave 2 compared to Sex.

Table 8.24

*Summary of Hierarchical Regression Analyses for Variables Predicting Stress Over
Twelve Months*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	.65	.38	.14		
Sex	-7.62	2.15	-.28**	.09	.09**
Step 2					
Age	.66	.37	.14		
Sex	-7.97	2.16	-.29***		
Attachment Change	2.13	1.69	.10	.10	.01
Step 3					
Age	.58	.36	.12		
Sex	-8.19	2.05	-.30***		
Attachment Change	1.82	1.61	.08		
Anxiety	.48	.12	.33***		
Avoidance	-.05	.13	-.03	.20	.10***
Step 4					
Age	.33	.33	.07		
Sex	-5.23	1.92	-.19**		
Attachment Change	.88	1.46	.04		
Anxiety	.17	.12	.12		
Avoidance	.05	.12	.03		
Stress W1	.42	.07	.45***	.35	.15***

** $p < .01$. *** $p < .001$.

8.3.8.4 Prediction of School Attitude Over Time

Model one was not significant, $F(2, 129) = .23, p = .793$, with the demographic variables in the first step explaining a non-significant percentage of variance in School Attitude in Wave 2. As shown in Table 8.25, neither Age nor Sex contributed significantly to the prediction of School Attitude at the second assessment point.

The second model was similarly not significant, $F(3, 128) = 1.34, p = .263$, with the addition of Attachment Change in step two accounting for a further non-significant percentage of variance in School Attitude. None of the variables achieved a significant beta coefficient or contributed significantly to School Attitude in Wave 2.

Step three was however significant, $F(5, 126) = 5.49, p < .001$, and contributed an additional 14.80% of variance in School Attitude. Anxiety and Avoidance both attained significant beta coefficients, with Avoidance the larger predictor.

The fourth step explained a further 22.1% of the total variance in School Attitude, with model four also significant, $F(6, 125) = 13.89, p < .001$. With the entry of School Attitude in Wave 1, both Age and Attachment Change achieved significant beta coefficients in the fourth model. Pre-existing scores of School Attitude was the largest predictor of the three variables, with Attachment Change marginally trailing Age in terms of contributions.

Table 8.25

*Summary of Hierarchical Regression Analyses for Variables Predicting School Attitude
Over Twelve Months*

	<i>B</i>	<i>SEB</i>	β	R^2	R^2 Change
Step 1					
Age	.07	.16	.04		
Sex	-.50	.91	-.05	.004	.004
Step 2					
Age	.08	.16	.04		
Sex	-.71	.90	-.07		
Attachment Change	1.34	.71	.17	.03	.03
Step 3					
Age	.17	.15	.09		
Sex	-.45	.84	-.04		
Attachment Change	1.29	.66	.16		
Anxiety	-.11	.05	-.21*		
Avoidance	-.13	.05	-.24*	.18***	.15***
Step 4					
Age	.31	.13	.17*		
Sex	-.25	.72	-.02		
Attachment Change	1.29	.57	.16*		
Anxiety	.01	.05	.02		
Avoidance	-.08	.05	-.14		
School Attitude W1	.61	.09	.56***	.40***	.22***

* $p < .05$. *** $p < .001$.

8.3.8.5 Overall Summary

Pre-existing scores in Wave 1 were the best predictors of adolescent adjustment at the second point of assessment. They solely predicted Depression and Self-esteem, and accounted for a significant proportion of the variance in Stress and School Attitude. Attachment Change did not predict adolescent wellbeing in Wave 2 with one exception. A normative/stable reorientation towards peers for attachment needs, older age and positive pre-existing school attitudes collectively predicted more positive self-reports of School Attitude in Wave 2. After accounting for pre-existing scores in Wave 1, Sex and Age demonstrated significant contributions to Stress and School Attitude respectively but were both not associated with Depression and Self-esteem. Attachment models expectedly predicted adolescent adjustment in the third step, but no longer contributed to adolescent wellbeing after accounting for pre-existing scores. Anxiety was more influential than Avoidance, and significantly predicted all aspects of adolescent psychological health. Avoidance only uniquely predicted Self-esteem and School Attitude.

8.4 Discussion

8.4.1 Overview

The intention of this longitudinal study was two-fold and aimed at firstly demonstrating the longitudinal process of attachment reorganization, and secondly investigating associations between changes in attachment relationships and adolescent psychological health while accounting for the influences of attachment models. Attachment reorganization is postulated to be a developmental process of reorientation

to peers for attachment needs, yet inconsistencies in the direction of movement of attachment functions longitudinally have been demonstrated (e.g., Friedlmeier & Granqvist, 2006). The normative shift of attachment function from parents to peers is also proposed to comprise healthy adult development (Pitman & Scharfe, 2010), but there is substantial variability regarding when attachment reorganization begins and the rate by which attachment functions are shifted from parents to peers (Bowlby, 1969/1982; Kobak et al., 2007).

In turn, attachment working models have established influences on adolescent psychological health, and potentially perpetuate psychological maladjustment by affecting the rate and extent of attachment reorganization demonstrated (Freeman & Brown, 2001; Mikulincer & Shaver, 2007; Scharfe & Cole, 2006). Given that individual differences in attachment reorganization have documented implications for adolescent adjustment (Berman & Sperling, 1991; Dishion et al., 2004; Goldstein et al., 2005; Perosa et al., 1996; Vitaro et al., 2000), examining the effects of attachment relationships as they change over time while factoring in attachment expectancies would clarify the importance of normative attachment reorganization for adolescent wellbeing.

8.4.2 Longitudinal Changes in Attachment Reorganization during Adolescence

In general, the present longitudinal findings revealed little evidence of change in overall attachment strength reported to mothers, fathers, and friends by either early or late adolescents. Although early adolescents continued to report higher overall attachment than late adolescents, no significant age differences in attachment strength was revealed as a function of gender. However, different patterns in utility of attachment targets consistent with a normative movement from parents to peers were demonstrated. For the subset of romantically-involved late adolescents, increased

attachment to romantic partners was accompanied by a decline in friend attachment only, with partner attachment increasing to a similar extent regardless of whether the same romantic partner as twelve months ago was reported. These normative patterns in the utility of attachment figures did not translate into the developmental model of attachment reorganization being demonstrated longitudinally. Global attachment models also did not differentially influence the longitudinal process of attachment reorientation. These longitudinal results will be discussed in light of the predictions made in accordance with the existing attachment reorganization literature, and with particular reference to Friedlmeier and Granqvist's (2006) study.

8.4.2.1 Age Differences

Partial support was demonstrated for the hypotheses regarding changes in overall attachment strength reported by both early and late adolescents in the preceding twelve months. Contrary to predictions, early adolescents did not demonstrate a decline in the overall amount of attachment reported to mothers, fathers, and friends across time. However, overall attachment strength reported by late adolescents remained relatively stable between the two waves of data collection, as anticipated.

Whereas Paterson and her colleagues (1994) found the utility of mothers and fathers as attachment targets to decline with increasing age, and a corresponding increase in the selection of friends for attachment functions, these changes in choice of attachment targets were not reflected in the overall attachment strength reported by early adolescents. A plausible explanation for this lack of finding could be that early adolescents are still using parents as the main providers of attachment functions with friends functioning instead as ad-hoc attachment figures (Waters & Cummings, 2000). Early adolescence is marked by increased involvement with peers and the development

of competencies such as mutual self-disclosure and intimacy (Collins & Sroufe, 1999) that support the eventual formation of a peer attachment bond (Kobak et al., 2007; Rosenthal & Kobak, 2010). This experimentation with friends as attachment figures, however, occurs from the relative safety of the parent-adolescent relationship (Waters & Cummings, 2000), with friends taking on roles as attachment figures only by middle adolescence (Allen & Land, 1999).

In a similar vein, peer attachment bonds take time to form (Scharf & Maysless, 2007) and the utility of two assessment points spaced only twelve months apart may have been insufficient for establishing a significant difference in the amount of overall attachment reported (Friedlmeier & Granqvist, 2006). Early adolescents may still be orienting towards friends from parents for attachment functions as peers were previously found to serve many of the same functions as parents from middle to late adolescence (Buhrmester, 1992; Hazan & Zeifman, 1999; Collins & Sroufe, 1999). By contrast, late adolescents would have already successfully reoriented towards peers for attachment needs and hence report stability in total attachment strength reported to parents and friends (Hazan et al., 1991; Friedlmeier & Granqvist, 2006).

8.4.2.2 Gender Differences

The second set of hypotheses concerning longitudinal trends in overall attachment strength reported to mothers, fathers, and friends by early and late adolescents according to gender was somewhat supported. Early adolescents continued to report higher total attachment strength than late adolescents over twelve months, but failed to demonstrate the expected gender difference in attachment scores. Late adolescent males and females did not report differences in their overall attachment as hypothesized yet

the validity of this finding is debatable given there were no significant differences in attachment strength demonstrated as a function of time.

The most parsimonious explanation for these set of findings is that the changes in overall attachment strength reported by both early and late adolescents were not large enough to attain statistical significance. Similar to the study by Friedlmeier and Granqvist (2006), measuring overall attachment strength only twelve months apart may have been insufficient for documenting significant changes in attachment. Their prospective longitudinal research demonstrated negligible differences in attachment reorganization across 12 to 15 months, with only 59.9% ($n = 115$) of adolescents reporting any change in attachment (Friedlmeier & Granqvist, 2006). Changes in attachment demonstrated were also found to occur from parents to peers or in the reverse direction (Friedlmeier & Granqvist, 2006). For the present study, not all adolescents may have reported changes in attachment reorientation, and those who did may have evinced either a normative movement of attachment functions to peers, or a “backtransfer” movement of attachment to parents. Therefore, early adolescents would continue to report higher overall attachment strength than late adolescents, and there may be insufficient changes in attachment orientation over the year to identify any gender differences within each age group of adolescents.

Moreover, research (e.g., Paterson et al., 1994) identifying gender differences in the utility of attachment figures had used the IPPA which measures the quality of attachment to attachment figures. Studies identifying attachment functions in specific relationships have not found gender differences in attachment strength between different age groups of adolescents (Freeman & Brown, 2001; Markiewicz et al., 2006). They found negligible gender difference in the nomination of friends as attachment figures by middle adolescence (Nomaguchi, 2008) with the utility of mothers and friends similar across different developmental groups of adolescents (Rosenthal &

Kobak, 2010). As such, the trend of gender differences in attachment strength evinced in the cross-sectional study may actually be spurious and an artifact of ranking attachment figures in the modified ANQ.

8.4.2.3 Attachment Figures

Examination at the level of attachment targets revealed specific trends in who adolescents selected as attachment figures across twelve months. Early adolescents trended towards declines in attachment strength reported to parents, and a non-significant increase in attachment to friends. Late adolescents reported similar levels of parental attachment between the two data collections, and a significant decrease in their reported attachment to friends. An increase in attachment strength to romantic partners was demonstrated by romantically-involved late adolescents regardless of whether the same romantic partner as a year ago was reported. This increased attachment to romantic partners by romantically-involved late adolescents coincided with a decrease in friend attachment whereas no changes were reported in parental attachment. These findings not only highlight different patterns of development in the individual attachment relationships (Nickerson & Nagle, 2005), but more importantly suggest that attachment to romantic partners derive mostly from friends in alignment with an attachment reorganization perspective (Connolly & Johnson, 1996; Hazan & Zeifman, 1999). The result that late adolescents demonstrated similar amount of reorientation towards romantic partners irrespective of the length of their romantic relationships is also inconsistent with the existing attachment literature (i.e, Fraley & Davis, 1997; Hazan & Zeifman, 1994).

The different patterns of development demonstrated in attachment strength to mothers, fathers, and friends by early and late adolescents generally parallel previous

research establishing the normative movement of attachment functions from parents to peers (Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006). The decline in parental attachment and corresponding increase in attachment to friends reported by early adolescents can be interpreted as a normative increase in striving for autonomy during adolescence (Ryan & Lynch, 1989) with early adolescents learning to use friends as attachment figures (Allen, 2008). Alternatively, the development of romantic relationships is a primary task of late adolescence (Sullivan, 1953) where late adolescents prepare to take on adult roles and the search for a pair-bond with a peer becomes more acute (Kobak et al., 2007). Late adolescents shift their attachment functions to peers regardless of current romantic involvement (Friedlmeier & Granqvist, 2006), and would likely be moving attachment needs from friends to romantic partners if they were romantically-involved (Markiewicz et al., 2006).

In turn, the finding that attachment to romantic partners appears to originate more from attachment to friends than mothers specifically concurs with studies indicating that the support obtained from friends and romantic partners are similar, and differ to the support obtained from parents (Furman, 1999; Ha et al., 2010). Friendships and romantic relationships share important similarities such as intimacy and companionship, with friendships forming the foundation on which competencies and skills needed to establish later intimate romantic relationships are practiced (Collins, Hennighausen et al., 1997; Collins et al., 2009; Furman et al., 2002). Perceptions of support and intimate involvement with friends were found to decline as commitment to romantic relationships increased (Connolly & Johnson, 1996; Johnson & Leslie, 1982). Adolescents involved in longer, more exclusive romantic relationships also tended to report smaller friendship networks (Shaffer & Ognibene, 1998). In essence, romantic partners may begin to take over the role of “best friend” as romantic relationship becomes increasingly committed (Hendrick & Hendrick, 1993).

Age-related shifts in the roles of best friends are also likely to occur as romantic relationships become more normative (Kuttler & La Greca, 2004; Laursen & Williams, 1997). Best friends were chosen less for attachment functions with each successive older age group (Markiewicz et al., 2006) with adolescents preferring romantic partners over best friends as attachment figures (Doyle et al., 2009). Sexual exploration and gratification become more important with greater dating involvement and maturity, and result in increased investment in romantic relationships to gratify the needs that friends cannot provide (Laursen, 1996). Across adolescence, the percentage of adolescents nominating romantic partners as attachment figures increased whereas that nominating friends stayed consistent (Nomaguchi, 2008; Rosenthal & Kobak, 2010). Romantic partners progressively ascend through the adolescent attachment hierarchy to become primary attachment figures, and ultimately provide a broad range of social provisions including those which friends cannot cater for (Connolly & Johnson, 1996; Furman & Wehner, 1994, 1997).

This study parallels that of Friedlmeier and Granqvist (2006) in demonstrating similar attachment strength reported to romantic partners by late adolescents regardless of whether they were involved with the same romantic partner in the preceding twelve months. While inconsistent with suggestions it requires two years before a romantic partner becomes an attachment figure (Fraley & Davis, 1997; Hazan & Zeifman, 1994), this findings concurs with newer research indicating that young adults used their romantic partners for all attachment functions in romantic relationships of less than two years' duration (Heffernan et al., 2012).

Relationship conceptions are not tied to specific partners, and so changes in romantic relationships are likely reflective of developmental maturity and experience (Connolly et al., 2004). Perceptions of romantic relationships change with age, with cognitive maturation and increasing independence providing adolescents with more opportunities

to explore romantic relationships (Laursen, 1996). Current dating experience was positively related to aspects characterizing closeness and mutual commitment (Laursen & Williams, 1997) with increased confidence in the romantic partner's availability and support as the relationship develops reinforcing romantic perceptions (Shulman & Scharf, 2000).

Adolescents become more adept and willing to use their partners to fulfill attachment needs, with the importance of romantic partners as providers of support and targets of intimacy increasing throughout adolescence (Furman & Wehner, 1994, 1997; Seiffge-Krenke, 1997; Shulman & Kipnis, 2001). Specifically, older adolescents rated romantic partners more favorably on social support than other relationships regardless of the length of the romantic relationship (Connolly & Johnson, 1996), reported more daily interactions with romantic partners (Adams, Laursen, & Wilder, 2001) and experienced romantic relationships as less stressful, and easier to cope with, compared to early adolescents (Nieder & Seiffge-Krenke, 2001). Collectively, these two factors of age and experience likely facilitate the process of attachment reorganization whereby late adolescents not only reorient more readily towards romantic partners as attachment figures, but are also more skilled and disposed towards seeking attachment functions from romantic partners

8.4.2.4 Attachment Reorganization Over Time

The current study was, however, not able to fully confirm the longitudinal model of attachment reorganization proposed by Hazan and Zeifman (1994, 1999). A slight majority ($n = 90$, 57.7%) of adolescents demonstrated either a normative reorganization of attachment from mothers to peers or no movement in attachment functions, with another 66 adolescents (42.3%) evincing a "backtransference" of attachment needs to mothers. These findings align with those of Friedlmeier and Granqvist (2006) and

concur with their conclusion that attachment processes are likely in flux even in middle to late adolescence.

The nature of friendships and romantic relationships during adolescence may provide some insight into the difficulties encountered in attempting to demonstrate the developmental model of attachment reorganization longitudinally. Both friendships and romantic relationships are voluntary and egalitarian relationships, and often lack the emotional investment and long-term commitment demonstrated in parental attachment relationships (Furman & Shomaker, 2008; Furman et al., 2002; Scharf & Mayseless, 2007). There is substantial instability in adolescent friendships (Hardy, Bukowski, & Sippola, 2002), with previous research indicating a high 'churn' factor in just several weeks (Cairns et al., 1995; Chan & Poulin, 2007). Nearly all adolescents surveyed in this study reported a change in their friendship networks, consistent with research indicating that only 16% of the friendship network remained identifiable after one school year (Cairns et al., 1995).

Similarly, most adolescents report a number of different romantic relationships over adolescence (Furman & Winkles, 2010), with romantic relationships emerging first in early adolescence and developing progressively into late adolescence (Carver et al., 2003; Connolly et al., 2004; Seiffge-Krenke, 2003; Shulman & Scharf, 2000). In this research, 97 adolescents reported romantic involvement throughout the year but only half ($n = 56$) reported romantic relationships at the second data collection. As orientations towards romantic relationships change, so do their trajectories of involvement (Joyner & Udry, 2000) with stable romantic relationships becoming more prevalent only in late adolescence (Scharf & Mayseless, 2007).

Moreover, adolescents are meant to decentralize their emotional investments in parents as part of establishing autonomy, yet this involves investing attachment functions in peers who are themselves embarking on the same normative process

(Scharf & Mayseless, 2007). Most friendships and romantic relationships are not stable enough to provide emotional security (Nomaguchi, 2008) with adolescents distributing their emotional investments among several attachment figures to avoid depending on any one individual to meet attachment needs (Scharf & Mayseless, 2007). The experimentation with peers as ad-hoc attachment figures rarely result in the formation of enduring attachment bonds with parents continuing to function as primary attachment figures even in late adolescence (Ainsworth, 1989; Kobak et al., 2007).

8.4.2.5 Individual Differences in Attachment Models

No support was demonstrated for the hypothesis that global attachment models would differentially influence the process of attachment reorientation. This finding is inconsistent with previous research that found attachment expectancies to affect attachment reorganization both on a cross-sectional and longitudinal level (Freeman & Brown, 2001; Friedlmeier & Gransvist, 2006; Nickerson & Nagle, 2005).

Two limitations of this longitudinal research are likely responsible for the failure to demonstrate differential effects of attachment expectancies on attachment reorganization. Firstly, no significant changes in attachment reorganization across twelve months were demonstrated in this study. Initial difficulties in categorizing adolescents indicated that there was no seamless transition of attachment functions from mothers to peers, with attachment functions directed both towards and away from peers. These findings were similarly demonstrated by Friedlmeier and Granqvist (2006). Secondly, combining adolescents who evinced a normative reorganization with those who did not demonstrate any change into one category may have averaged their scores on Anxiety and Avoidance, resulting in the current inability to establish significant findings. However, Anxiety and Avoidance scores were similar for both the

‘Normative/Stable’ and ‘Contracted’ groups of adolescents, and it was unlikely that differential influences of attachment expectancies would be demonstrated.

Moreover, the present study categorized changes according to a general reorientation of attachment towards or away from mothers but did not specify change at the level of attachment functions. Using a broader criteria such as general reorientation did not allow this study to ascertain if the changes in attachment strength reported to mothers and peers accorded with the linear movement of attachment functions proposed by Hazan and Zeifman (1994, 1999), or if adolescents were using attachment figures for functions asynchronous with this developmental model. By contrast, Friedlmeier and Granqvist’s (2006) study employed a Guttman scaling method that enabled them to verify the sequential movement of attachment functions, and therefore to clearly establish the direction of attachment reorientation from parents to peers. The specifics in Friedlmeier and Granqvist’s (2006) methodology likely enhanced their ability to demonstrate the influence of attachment insecurity longitudinally despite experiencing levels of flux in attachment reorientation similar to those reported in this research.

Overall, current methodological limitations restrict the extent to which any firm conclusions can be drawn regarding the influences of attachment expectancies on the longitudinal process of attachment reorganization. Further research is warranted to replicate the findings of Friedlmeier and Granqvist’s (2006) study.

8.4.3 Longitudinal Associations between Changes in Attachment and Adolescent Adjustment

Changes in attachment relationships were not associated with outcomes in adolescent adjustment variables for this longitudinal research with one exception. Normative or no change in attachment relationships, increased age and existing positive school attitudes

collectively predicted positive School Attitude in Wave 2. Global attachment models were influential for adolescent psychological health at the second assessment point prior to the introduction of pre-existing adjustment scores. Anxiety predicted all four wellbeing variables whilst Avoidance contributed to Self-esteem and School Attitude. Pre-existing levels of adjustment in Wave 1 were the largest predictors of adolescent adjustment twelve months later and accounted solely for Depression and Self-esteem among adolescents. Initial stress levels and the female gender were most indicative of Stress after one year.

8.4.3.1 Changes in Attachment Relationships and Adolescent Adjustment

Changes in attachment relationships were associated with adolescent adjustment solely for School Attitude in conjunction with Age and pre-existing scores for School Attitude. Older adolescents demonstrating either normative or no change in attachment relationships and positive pre-existing school attitudes endorsed better School Attitudes in Wave 2. Attachment Change was otherwise not related to outcomes for Depression, Self-esteem, and Stress longitudinally.

The reorientation of attachment needs from parents to peers ideally occurs in the context of warm parent-adolescent relationships that provide felt security (Allen & Land, 1999). This provision of a secure base encourages adolescent striving for cognitive and emotional autonomy (Allen et al., 1994; Allen et al., 2003; Collins, 1990), and allows adolescents to venture forward to negotiate the challenges of school (Burge et al., 1997). Adolescents who reported greater security in close relationships endorsed better school attitudes and demonstrated higher academic achievement even after two years (Burge et al., 1997; Domagala-Zysk, 2006; Soucy & Larose, 2000). By contrast,

adolescents reporting higher attachment anxiety in early adolescence demonstrated declines in school grades over the next three years (Doyle & Markiewicz, 2005).

Peer attachment and intimate friendships were also found directly related to school attitudes and school exploration (Meeus et al., 2002; Wilkinson & Kraljevic, 2004). Positive peer relationships were shown to foster achievement and school engagement from the earliest grades, and related to feelings of motivation and comfort in high school (Marcus & Sanders-Reio, 2001) with adolescents likelier to seek help when faced with academic challenges (Stanton-Salazar, Chavez, & Tai, 2001). Conversely, adolescents experiencing difficulties in forming peer attachment bonds tended to report less social support from peers (Berndt & Keefe, 1995; Rumberger, 1995; Ollendick, Weist, Borden, & Greene, 1992), and may ultimately come to view school unfavorably (Benner, 2011). In fact, involvement with pro-academic peers and more supportive parent relationships were related to greater personal value on academic success, higher academic achievement, and greater attachment to schools (Doll & Hess, 2004; LeCroy & Krysik, 2008). Collectively, these studies make explicable the relationship demonstrated between age, pre-existing school attitudes, and the normative shift towards peers for attachment functions in predicting School Attitude in Wave 2.

A lack of association between Attachment Change and the three indices of Depression, Self-esteem, and Stress in Wave 2 was already demonstrated at the bivariate level (r s ranging from .003 to .09). Attachment reorganization is considered normative in adolescence, and changes reported in attachment relationships may have little or negligible impact on adolescents' psychological health just twelve months later. This would accord with previous studies indicating no relationship between attachment reorientation and problem behaviors (e.g., Rosenthal & Kobak, 2010). Difficulties in categorizing adolescents according to markers of normative attachment reorganization provide further support for Friedlmeier and Granqvist's (2006) study indicating

attachment processes as ongoing even in middle to late adolescence. Changes in attachment relationships during the developmental phase of attachment reorganization may therefore not be accurate indicators of adolescent wellbeing.

8.4.3.2 Attachment Models and Adolescent Adjustment

Although no specific hypotheses were created aside from accounting for the effects of individual differences in attachment models, both Anxiety and Avoidance uniquely predicted adolescent adjustment before initial scores of adolescent wellbeing in Wave 1 were accounted for. Anxiety was more influential and predicted Depression, Stress, Self-esteem, and School Attitude, with Avoidance accounting only for the latter two adjustment variables. Pre-existing scores in Wave 1 were most influential for Depression and Self-esteem in Wave 2, with initial Stress scores and the female gender simultaneously explaining most of the variance in Stress.

Attachment Anxiety and Avoidance

Results from both the current longitudinal and cross-sectional research suggest that changes in attachment relationships are less related to adolescent psychological health than are attachment expectancies. These findings concur with postulations that insecure attachment increases vulnerability for psychopathology (Brenning, Soenens, Braet, & Bosmans, 2011) by predisposing and perpetuating difficulties in behavioral, cognitive and emotional regulation as predicted by attachment theory (Bartholomew & Horowitz, 1991; Cooper et al., 2004; Wei et al., 2005). It is, however, noteworthy that Avoidance did not predict Depression longitudinally. Avoidance has been suggested to relate to achievement-related aspects of depression (also known as introjective depression) inclusive of perfectionism, self-punishment, and self-criticism (Blatt, 1974). These

aspects of depression may have become more dominant for avoidant adolescents over the preceding twelve months but are not detected as the questionnaire primarily assesses depressive symptomatology. Alternatively, advances in cognitive maturity and formal operational thinking across the two waves of data collection may enable avoidant adolescents to more successfully employ deactivating strategies that divert attention away from upsetting issues and suppress feelings of distress (Belsky, 2002; Greenberger & McLaughlin, 1998; Mikulincer et al., 2003). The latter explanation would accord with the finding that Avoidance also did not predict Stress in the longitudinal study, suggesting that the cognitive load conferred by the use of self-report questionnaires was insufficient to diminish the ability of avoidant adolescents to maintain their deactivating strategies (Fraley, Garner et al., 2000; Mikulincer, Dolev, & Shaver, 2004).

Adolescent Adjustment Variables

Pre-existing levels of adolescent adjustment were found the best indicators of adolescent adjustment a year later aligning with research demonstrating moderate stability and a continuation of symptoms in adolescent psychological health across time (Ge & Conger, 2000). Shared method variance aside, adolescents did not evince significant differences in self-reports on any of the wellbeing variables over this period. Twelve months may have been insufficient to capture significant changes in adolescent psychological functioning, with longer intervals between assessments required (Wei et al., 2005). On the other hand, this study utilized self-reports with adolescents potentially rating their experiences based on how they are currently feeling rather than in comparison to how they felt a year ago. Further, the utility of a 4- or 5-point Likert rating scale may have circumscribed adolescents' ability to rate slight differences perceived in psychological health more accurately.

Being female and initial scores of Stress in Wave 1 were most predictive of scores on Stress at the second assessment point. Gender differences in perceived stress are postulated to emerge in early adolescence due to a strong increase in psychological stress among adolescent females, such that females consistently report higher levels of stress compared to adolescent males by 15 to 17 years of age (Van Wel, Linssen, & Abma, 2000). Specifically, adolescent females report more stressors, indicate higher levels of stress and perceive specific situations as more stressful (Compas, Davis, & Forsythe, 1985; Hartos & Power, 1997; Groer, Thomas, & Shoffner, 1992; Moore & Leung, 2002). Theorists have proposed that gender intensification during adolescence, whereby traditional gender expectations of adolescents by parents, teachers, and peers become more pronounced, result in adolescent females being less adequately prepared to manage stressors experienced (Bush & Simmons, 1987; Groer et al., 1992). Additionally, females' social roles expose them to more stress about interpersonal relationships (Gore & Aseltine, 1995; Phelp & Jarvis, 1994; Turner & Llyod, 1999) and physical appearances (Groer et al., 1992; Allgood-Merten, Lewinsohn, & Hops, 1990) during adolescence, with increased vulnerability to their effects on psychological health (Kessler & McLeod, 1984; Meadows et al., 2006).

8.4.4 Limitations and Future Directions

Drawing firm conclusions from this longitudinal study is restricted by several limitations. Firstly, the low re-participation rate (38.0%) presents a clear limitation of this study. Attrition is a common problem experienced by longitudinal research on adolescent development (Jelicic, Phelps, & Lerner, 2010; Stephens, Thobodeaux, Sloboda, & Tonkin, 2007) and can compromise the validity and integrity of studies by creating non-representative groups and by reducing statistical power (Prinz, Smith,

Dumas, Laughlin, White, & Barron, 2001). Caution is warranted before generalizing current findings to the adolescent population because results may pertain only to the select group of adolescents who re-participated (Boys et al., 2003; Courser, Shambeln, Lavrakas, Collins, & Ditterline, 2009). Future longitudinal research could minimize sample attrition by collecting detailed contact information and adopting multiple methods to engage and retain adolescent participants (Davis, Broome, & Cox, 2002; Sullivan, Rumpitz, Campbell, Eby, & Davidson, 1996; Taylor, 2009).

Furthermore, the non-response bias arising from selective attrition is likely to result in an underrepresentation of certain groups of adolescents under investigation (Flick, 1988). Adolescent males in particular are difficult to retain in follow-up research (Boys et al., 2003) and this was similarly experienced in the present study. Romantic involvement in early adolescence is also relatively uncommon (Carver et al., 2003; Connolly et al., 2004; Feiring, 1996), and this was reflected in the small number of early adolescents with romantic relationships recruited. Consequently, this study was unable to conduct more complex statistical analyses on the key demographic variables (i.e., age, sex, and romantic status) of interest. Establishing sufficient sample sizes of these two select groups in future research would enable a thorough examination of the developmental processes and changes over time in attachment reorganization.

Thirdly, data was collected from two assessment points spaced only twelve months apart. This time frame may have been insufficient for establishing significant changes in both attachment reorganization and adolescent adjustment given that few overall differences were noted. Moreover, it is unclear how the relationships among the variables presently investigated may fluctuate over longer periods of time as attachment relationships change throughout adolescence (Hazan & Zeifman, 1994; Markiewicz et al., 2006). The addition of more assessment points over a lengthier period of time would enhance understanding of how changes in attachment relationships influence adolescent

wellbeing (Friedlmeier & Granqvist, 2006; Wei et al., 2005). Comparisons with a young adult population may increase insight into the importance of peers for adolescent psychological health as romantic relationships become more established, and the rate of friendship renewal demonstrated by adolescents stabilizes.

8.5 Conclusion

In conclusion, the present study has replicated previous longitudinal research examining the process of attachment reorganization, and contributed to current knowledge by additionally investigating the associations between changes in attachment relationships and psychological health in a sample of early and late adolescents.

Although no significant change in overall attachment strength was reported over twelve months, early and late adolescents demonstrated different patterns of attachment to various targets consistent with a normative reorientation of attachment functions from parents to peers. These normative trends of change, however, did not culminate in the sequential movement of attachment functions being demonstrated longitudinally, with a significant minority of adolescents also exhibiting a “backtransference” of attachment functions to mothers. Interestingly, attachment to romantic partners derived more from friends than mothers, with romantically-involved adolescents revealing a similar extent of attachment reorganization regardless of whether the same romantic partner as a year ago was reported. These findings highlight the dynamic nature of peer relationships in adolescence with friends functioning as intermediary attachment figures between parents and romantic partners (Scharf & Mayseless, 2007; Rosenthal & Kobak, 2010). Romantic partners, in turn, appear interchangeable with romantic relationships generally advancing attachment reorientation amongst late adolescents but not necessarily requiring two years to become attachment bonds (Heffernan et al., 2012; Shulman &

Seiffge-Krenke, 2001). Overall, the current findings are consistent with those of Friedlmeier and Granqvist (2006) and make imperative the need for further longitudinal research into the process of attachment reorganization in adolescence.

Only one association between changes in attachment relationships and adolescent adjustment was demonstrated, with better school attitudes predicted from a combination of increasing age, initial positive school attitudes, and a normative/stable reorientation from mothers to friends and romantic partners. This suggests that peers become increasingly important for some aspects of psychological health as adolescents mature and shift attachment functions from parents to peers. However, attachment anxiety and avoidance continued to contribute more to adolescent adjustment despite the reorientation of attachment needs demonstrated. As such, adolescent adjustment seems more contingent on individual differences in attachment models than who adolescents turn to for attachment needs (Pitman & Scharfe, 2010). The significance of attachment for adolescent wellbeing therefore varies depending on the conceptualization of attachment, wherein attachment strength indicates the presence of an attachment bond but attachment expectancies reflect variations in the quality of attachment relationships (Weinfield et al., 2008). Collectively, these findings reinforce the need for integrated research on both normative attachment and individual differences in attachment expectancies to promote a fuller understanding of attachment in adolescence and its effects on psychological health (Hazan et al., 2004).

CHAPTER 9

General Discussion

9.1 Introduction

Significant transformations occur to interpersonal relationships during adolescence where physical and cognitive development, coupled with expanding roles in a more complex social world, expose adolescents to a widening array of stressors which may be difficult to cope with (Ge & Conger, 2000). A major intention of the present research was to apply attachment theory towards understanding relationships in adolescent attachment networks and examining how they develop over twelve months. Another aim was to determine the importance of interpersonal relationships for adolescent adjustment, and to investigate the potential effects of these changing relationships for adolescent wellbeing.

A general premise of the attachment literature is that attachment networks undergo significant structural and compositional changes during adolescence (Doherty & Feeney, 2004; Trinke & Bartholomew, 1997). A number of hypotheses were proposed about how attachment relationships change, and how these changes would impact adolescent psychological health given that the influences of interpersonal relationships on adolescent wellbeing have seldom been assessed longitudinally whilst accounting for the rapid developmental changes in adolescence (Hay & Ashman, 2003). Consideration of these issues is pertinent given trends of growing maladjustment among today's youth (Clarke et al., 2006; Collishaw et al., 2010) with interpersonal relationships key resources for optimal adolescent wellbeing (Boutelle et al., 2009; Hall-Lande et al., 2007).

Proposals regarding changes in adolescent attachment networks were supported on a cross-sectional level but an important finding to emerge from longitudinal analyses was that the expected movement of attachment functions from parents to peers was not supported. Further, changes in attachment relationships were not found to consistently relate to adolescent adjustment. The effects of attachment relationships on adolescent wellbeing were more subtle and dependent on several factors including age, identity of the attachment target, and the index of adjustment examined. In this regard, global rather than specific attachment models were most predictive of adolescent psychological health on both cross-sectional and longitudinal levels. Broader implications of these findings and directions for future research are discussed below.

9.2 Summary of Research Findings

This dissertation proposed three aims: i) to examine developmental differences in the use of attachment targets for different attachment functions according to age, gender, romantic status, and individual differences in attachment models, ii) to investigate changes in attachment relationships through the process of attachment reorganization over twelve months, and iii) to determine the relative effects of different attachment figures on indices of adolescent psychological health as attachment relationships evolve over the year. Results pertaining to these three aims are summarized and presented systematically in the order of attachment networks (i) in cross-section, (ii) over time, and (iii) with psychological health.

9.2.1 The Adolescent Attachment Network in Cross-section

Attachment theory proposes that adolescent attachment networks undergo several structural and compositional changes as attachment functions are shifted from parents to peers (Bowlby, 1969/1982; Hazan & Shaver, 1994). Attachment functions are themselves postulated to move sequentially in the order of Proximity-seeking, Safe Haven, Separation Protest, and Secure Base (Hazan & Zeifman, 1994; Fraley & Davis, 1997). Aligned with previous research (i.e., Markiewicz et al., 2006), the present dissertation proposed developmental differences in the utility of attachment figures for attachment functions, with the movement of attachment functions as accorded by attachment theory.

The findings were consistent with previous literature in demonstrating attachment reorganization at a cross-sectional level wherein attachment functions shifted progressively from Proximity-seeking to Secure Base. Attachment figures were used differentially for attachment functions in accordance with postulations that various attachment figures serve distinct needs during the different developmental phases of adolescence (Furman & Buhrmester, 1992; Sullivan, 1953). Attachment reorientation does, however, seem to be effected by gender differences with adolescent males evincing an apparent developmental ‘lag’ in this process. Furthermore, gender differences in the use of fathers and friends for attachment functions (e.g., Freeman & Brown, 2001; Markiewicz et al., 2006) extended beyond Safe Haven to incorporate the remaining three attachment functions. As demonstrated in earlier studies (e.g., Feeney, 2004; Goh & Wilkinson, 2007), involvement in a romantic relationship facilitated this process of attachment reorganization, but did not result in romantic partners being used more for attachment functions than mothers or friends. Rather, romantic partners were

used exclusively only for Separation Protest, and not Proximity-seeking as previously found (e.g., Markiewicz et al., 2006).

An added complexity demonstrated in other studies (e.g., Freeman & Brown, 2001; Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006) was the effects of attachment expectancies on attachment reorganization. Similar to Friedlmeier and Granqvist's (2006) findings, cross-sectional results found Anxiety to facilitate a movement towards peers for attachment needs. However, Avoidance resulted in less attachment reported to parents and friends, rather than an inhibition of attachment reorientation. Overall, the present findings corroborate both attachment theory and existing research in demonstrating that adolescents use various members of their attachment networks for different attachment functions depending on age, gender, romantic status, and global attachment models.

One point of contention raised by this study is the utility of Proximity-seeking in the measurement of adolescent attachment. Previous research has identified that proximity-seeking can alternatively be motivated by affiliative or sexual needs, and is not necessarily reflective of attachment concerns (Kerns et al., 2006; Kobak, 2009). Yet, the concept of proximity-seeking is central to attachment theory, wherein the innate attachment-behavioral system is outwardly manifested in behaviors that ensure proximity of the infant to its caregiver (Ainsworth, 1989). It has been argued that proximity-seeking can serve multiple behavioral systems, and thus should only be interpreted as attachment behavior if it is clearly in service of an attachment function (Kerns et al., 2006). The phrasing of the Proximity-seeking items on the Who-To measure (i.e., "Who do you want to spend time with?") is such that it is unclear whether answers are reflective of proximity-seeking in the context of attachment or affiliative needs (Kerns et al., 2006; Rosenthal & Kobak, 2010). The questionable validity of

Proximity-seeking represents one of several limitations of the Who-To, with other limitations explored further in this chapter.

9.2.2 The Adolescent Attachment Network Over Time

Attachment transference is postulated to occur as adolescents increasingly turn towards peers for support as part of establishing autonomy and individuation from parents (Grotevant & Cooper, 1986). Adolescents are expected to incrementally transfer attachment functions from parents to friends and then to romantic partners, with the latter ultimately replacing parents as the primary attachment figure at the top of the attachment hierarchy by young adulthood (Connolly & Johnson, 1996; Hazan & Zeifman, 1999). A subsample of adolescents from Wave 1 was examined over twelve months to determine if the findings from the cross-sectional study could be demonstrated longitudinally with different trajectories of attachment reorganization proposed for early and late adolescents.

Preliminary support for attachment transference was shown with longitudinal results paralleling earlier research in demonstrating that the process of relinquishing parents as attachment figures begins in early adolescence regardless of current romantic involvement (Hazan et al., 1991; Friedlmeier & Granqvist, 2006; Weiss, 1991). Attachment transference was likewise demonstrated with attachment strength to romantic partners found to move more from friends than mothers consistent with postulations that not all adolescent friendships become enduring attachment bonds (Ainsworth, 1989) whereby friends instead function as ad-hoc attachment figures (Waters & Cummings, 2000). However, the sequential movement of attachment functions was not replicated longitudinally with a significant minority of adolescents reporting a 'backtransference' or movement of attachment from peers to mothers.

Overall changes in attachment strength reported to attachment figures were not significant over time irrespective of age or gender, with a substantial minority indicating no shift of attachment from mothers to peers. Collectively, these findings suggest that attachment reorganization is not as straightforward as proposed by cross-sectional studies (e.g., Hazan & Zeifman, 1994; Fraley & Davis, 1997) with attachment formation still ongoing in middle-to-late adolescence (Friedlmeier & Granqvist, 2006).

Also consistent with other longitudinal studies (e.g., Friedlmeier & Granqvist, 2006; Heffernan et al., 2012) were findings that attachment to romantic partners increased over a year and was similar for romantically-involved late adolescents irrespective of whether the same romantic partner was reported throughout the research. In sum, the current longitudinal results parallel those of Friedlmeier and Granqvist (2006) in highlighting attachment reorganization as a complex process with the stepwise movement of attachment functions not confirmed longitudinally even though expected changes in specific attachment relationships were demonstrated according to age.

Longitudinal research (i.e., Heffernan et al., 2012) has recently questioned the two-year threshold proposed by Hazan and Zeifman (1994) required for romantic relationships to become full attachment relationships. This research found individuals to become attached to their romantic partners relatively quickly, and parallels previous studies that have established the presence of all attachment functions in comparatively new relationships (e.g., Friedlmeier & Granqvist, 2006; Heffernan et al., 2012). The validity of the two-year benchmark is further challenged by existing attachment literature that infants become fully attached to their primary caregiver within the first year of life (Ainsworth, 1989; Bowlby, 1969/1982; Hazan & Shaver, 1994). Whilst acknowledging that the time required for attachment relationships to develop may have been overestimated, researchers have also proposed modifications to the Who-To to

increase its sensitivity in distinguishing full attachment relationships from those which are still developing (Heffernan et al., 2012).

9.2.3 Adolescent Attachment Network and Psychological Health

Attachment theory proposes that adolescents shift their attachment functions from parents to peers as part of healthy development (Bowlby, 1969/1982; Hazan & Zeifman, 1994). Normative transformations in the adolescent attachment network entail changes in the meaning and functions of attachment relationships (Collins, 1997; Macek & Jezek, 2007) with the potential for maladjustment among those who deviate in the timing or extent of attachment reorganization (Kobak et al., 2007). The significance of attachment relationships for adolescent adjustment were examined both cross-sectionally and longitudinally in this dissertation, with differential links between attachment figures and adolescent adjustment proposed at a cross-sectional level, and the normative reorganization of attachment from parents to peers associated with optimal wellbeing anticipated at a longitudinal level. Individual differences in attachment working models were also investigated given their established influences on adolescent adjustment in previous cross-sectional and longitudinal studies (Cooper et al., 2004; Davila et al., 2005; Lee & Hankin, 2009).

Cross-sectional results appeared counterintuitive in that adolescent adjustment was not associated with attachment figures to whom high attachment was reported (i.e., mothers) but rather to whom least attachment was directed, with fathers uniquely predictive of stress only among adolescents without romantic relationships. Yet this finding aligns with that of Rosenthal and Kobak (2010) who found less attachment to fathers as predictive of higher risk of both internalizing and externalizing behaviors. An interaction with age was also expected consistent with a normative movement of

attachment from parents to peers (Allen & Land, 1999; Paterson et al., 1994; Wilkinson, 2006b). This was partially demonstrated with age moderating the relationship between peer attachment and adolescent depression and stress among romantically-involved adolescents only. There was, however, no 'sex allegiance' effect despite previous research indicating attachment preferences for the same-sex parent among adolescents (Rice et al., 1997; Wilkinson, 2006b) and that peer attachment would be more important for adolescent females (Joyner & Udry, 2000; Rosenthal & Kobak, 2010; Welsh et al., 2003; Zimmer-Gembeck et al., 2001).

The longitudinal results indicated no links between normative changes in attachment relationships and adolescent adjustment with one exception. Attachment reorientation was associated with better school attitudes among late adolescents already endorsing positive school attitudes. This concurs with research suggesting that preferences for peers as attachment figures are no longer a risk factor for delinquency by late adolescence (Nomaguchi, 2008). As hypothesized, individual differences in global attachment expectancies (i.e., Anxiety and Avoidance) directly contributed to adolescent adjustment on both cross-sectional and longitudinal levels, with attachment anxiety again the better predictor as demonstrated previously (e.g., Klohnen et al., 2005; Mikulincer & Shaver, 2007). Present results suggest that attachment expectancies are consistently better predictors of adolescent adjustment than attachment strength, with this study demonstrating the effects of the latter as complicated by whom attachment is directed or not directed at, age, and the adjustment index examined.

Difficulty in confirming the longitudinal sequence of attachment movement may account for the present lack of relationship between attachment reorganization and adolescent psychological health. This research combined both adolescents who had successfully moved attachment functions from parents to peers with those who indicated no shifts in attachment, which possibly obscured further advantages of

normative reorientation for adolescent wellbeing. However, the current lack of association underscores the importance of examining attachment reorientation over a protracted period of adolescence (Hazan et al., 2004), and reinforces the need for further studies examining the influences of parents and peers collectively as an attachment network on adolescent psychological health (Collins & Laursen, 2000; Laursen, Furman, & Mooney, 2006).

9.3 Broader Research Implications

Despite its limitations, results from the present dissertation can be applied to the broader research examining adolescent interpersonal relationships and psychological functioning. On a specific level, these results elaborate on the utility of attachment theory for understanding the expanding interpersonal networks of adolescents. On a general level, these findings provide insight into the extent to which attachment relationships affect adolescent psychological development.

9.3.1 Expansion, Not at the Expense of Existing Relationships

Although adolescence has historically been defined as a period of increasing individuation from parents (Grotevant & Cooper, 1986; Steinberg & Silk, 2002), current findings indicate that the expansion of interpersonal relationships in adolescence was not at the expense of existing relationships with parents. There was an expansion of the adolescent relationship network to incorporate friends and romantic partners, yet this expansion did not occur indefinitely with late adolescents reporting smaller networks than early adolescents after twelve months. Parents were continually nominated as part of adolescents' networks and as attachment targets at both assessment times, with

mothers receiving the most nominations for the former. This is consistent with attachment theory suggesting that parental figures remain permanent members of adolescents' attachment networks (Bowlby, 1969/1982) and continue fulfilling attachment functions (Furman & Buhrmester, 1992; Markiewicz et al., 2006) even if their influences now penetrate fewer aspects of the adolescent's life (Ainsworth, 1989).

Present research also did not find longitudinal evidence to support an 'all-or-nothing' movement of dependencies from parents to peers often assumed from the concept of attachment transference. A consistent finding was the continued use of parents as attachment figures by early and late adolescents with no significant changes in reported attachment strength to mothers and fathers across both data collections. Moreover, the inclusion of romantic partners into the attachment network did not translate into using them more than existing relationship figures for attachment functions. Mothers especially remained a central attachment figure for all adolescents regardless of age, gender or romantic status. Increased attachment strength to romantic partners was associated with declines in attachment to friends rather than mothers or fathers over twelve months.

Attachment theory proposes that attachment needs are distributed among multiple relationships figures ordered in an attachment hierarchy, with the primary attachment figure selectively oriented to for fulfillment of all attachment functions (Bowlby, 1969/1982; Hazan & Shaver, 1994). However, this study found defining adolescent relationships into an attachment hierarchy to be somewhat problematic methodologically. Although friends and romantic partners were used more for Separation Protest and Secure Base than demonstrated elsewhere (e.g., Fraley & Davis, 1997; Friedlmeier & Granqvist, 2006), these results are likely reflective of methodological limitations present in the Who-To (Kobak et al., 2007; Rosenthal & Kobak, 2010; Trinke & Bartholomew, 1997) rather than evidence that peers are

replacing parents as primary attachment figures. Several reasons have been suggested to support this contention.

Firstly, the original attachment functions proposed by Hazan and Zeifman (1994) have neither been systematically assessed nor validated, such that Proximity-seeking and Separation Protest may alternatively be motivated by affiliative or sexual rather than attachment needs (Kerns et al., 2006). In particular, the development of friendships and romantic relationships are hallmark tasks of adolescence (Collins, 2003; Dekovic, Engels, Shirai, de Kort, & Anker, 2002; Furman & Wehner, 1997; Hartup, 1992), and the functions and roles these relationships serve are highly salient during this period (Miller, Notaro, & Zimmerman, 2002). Adolescents face a variety of daily social and school-related challenges for which peers are more readily accessible and knowledgeable, with the affiliative behavioral system also accounting for a large proportion of adolescents' social proximity-seeking (Kobak et al., 2007; Rosenthal & Kobak, 2010). Friends and romantic partners can therefore serve safe haven and secure base functions without becoming primary attachment figures (Waters & Cummings, 2000).

Secondly, the contexts used to identify attachment functions in the Who-To may not comprise emergency situations that elicit the high levels of attachment system activation necessary to yield a strong test of preferences for attachment figures (Rosenthal & Kobak, 2010; Siebert & Kerns, 2009). For example, the items used to identify Safe Haven involve nonemergency situations or situations of low threat for which preferences for attachment figures are directed by more immediate contextual factors (Kobak et al., 2007; Kurdek, 2009; Rosenthal & Kobak, 2010). Advances in cognitive and emotional abilities during adolescence result in the attachment system being less frequently activated, with attachment behaviors terminated by a wider range of conditions under different circumstances (Allen & Land, 1999; Bowlby, 1969/1982).

Thus, researchers have suggested that distinguishing between emergency and nonemergency situations provides a useful way of differentiating attachment relationships from other supportive relationships (Waters & Cummings, 2000), with the attachment bonds maintained by older children and adults more readily identifiable under situations of emergency (Goldberg, Grusec & Jenkins, 1999) or when the availability of the attachment figure is threatened (Kobak & Madsen, 2008).

More importantly, continuing attachment bonds with parents are suggested to attenuate adolescents' attachment concerns and permit the affiliative and sexual systems to take precedence in adolescence (Allen & Land, 1999; Kobak et al., 2007). In the present results, mothers were used to a similar extent as peers for Separation Protest and Secure Base, with attachment strength to mothers remaining consistent over a year. This would suggest that adolescents are still using parents, especially mothers, as a secure base even as they begin to use friends and romantic partners as ad-hoc attachment figures under situations of non-emergency or low threat (Allen et al., 1994; Waters & Cummings, 2000). That is, parents' continuing role as primary attachment figures are likely only evident in emergency situations that result in high levels of attachment system activation (Kobak et al., 2007; Waters & Cummings, 2000) with most adolescent turning to parents under conditions of extreme stress (Steinberg, 1990). Consequently, parents remain primary attachment figures for adolescents and serve as attachment figures in reserve (Weiss, 1982, 1991).

No perfect methodology currently exists for examining attachment processes in adolescence given that increasingly more social interactions are motivated by affiliative, sexual or exploratory needs that do not involve the attachment system or preferences for attachment figures (Ainsworth, 1991; Kobak, 2009). Preferences for attachment figures are dependent on complex interpretive contexts wherein attachment needs may be more flexibly attended to or ignored (Allen, 2008). There is also a decline in both the

frequency and intensity of specific attachment behaviors directed towards attachment figures (Bowlby, 1969/1982) as individuals become increasingly self-reliant with age (Marvin & Britner, 2008).

This research supports previous studies in postulating that preferences for attachment figures may be more accurately observed under conditions where the attachment system is activated at high levels and multiple attachment figures are equally accessible (Kobak et al., 2007). Future research could consider naturalistic studies such as that of Fraley and Shaver's (1998) "airport separations" study whereby attachment behaviors were observed to occur under stress-eliciting conditions. However, two challenges that will need to be overcome include determining the contexts in which an attachment bond exists, and identifying markers of attachment that are not confounded by relationship quality or attachment style (Hazan et al., 2004).

9.3.2 Experimentation with Peer Relationships

Adolescence has also been described as a period for exploring interpersonal relationships (Blain et al., 1993; Steinberg & Silk, 2002) with adolescents learning to negotiate with others in their social systems (Gavin & Furman, 1989) and developing the capacity for mature intimacy and supportiveness in friendships and romantic relationships (Collins & van Dulmen, 2006; Scharf et al., 2004). The results of this dissertation concur with suggestions that adolescence is a period of experimentation with friendships and romantic relationships wherein adolescents try out peer relationships to see if they may serve attachment functions (Allen, 2008; Kobak et al., 2007). Nearly all adolescents reported changes in their friendship networks with more than two-fifths of romantically-involved adolescents reporting a different romantic partner from a year ago. Yet, the longitudinal findings indicated that attachment

strength to friends remained constant whilst attachment to romantic partners increased over twelve months irrespective of whether the same romantic partner was reported. Further, attachment strength reported to romantic partners was similar between late adolescents regardless of the length of the romantic relationship.

These findings accord with research identifying the fluid and dynamic nature of adolescent friendships (Chan & Poulin, 2007; Hardy et al., 2002) and the transitional nature of most early romantic relationship experiences (Feiring, 1996; Galliher, Welsh, Rostosky, & Kawaguchi, 2004), suggesting that the developmental significance of these relationships are tied to the functions they serve for the maturing adolescent, rather than the identity of any one peer (Connolly et al., 1999; Furman & Wehner, 1994; Wojslawowicz Bowker et al., 2006). Therefore, experimentation with friends and romantic partners for attachment functions as presently demonstrated is considered normative and developmentally appropriate in adolescence, with adolescents trying out different peer relationships, which are both easily relinquished and replaced.

Allen (2008) had previously suggested that the multiple functions and features of the attachment system may begin to operate less synchronously in adolescence, particularly in peer interactions. Adolescents become increasingly flexible and “opportunistic” in seeking out potential attachment figures as they begin to test friends and romantic partners as ad-hoc attachment figures (Allen, 2008; Waters & Cummings, 2000). This exploration of peer relationships is postulated to occur from the felt security of the parent-adolescent relationship (Allen & Land, 1999) with cross-sectional results indicating the use of mothers particularly for Secure Base, and longitudinal findings demonstrating stability in the amount of attachment reported to parents across twelve months. Often, the temporal instability in many friendships and romantic relationships preclude the development of attachment bonds (Campa et al., 2009; Nomaguchi, 2008) with adolescents reverting back to parents for attachment needs if the peer relationship

is unsuccessful. This was also demonstrated longitudinally with a significant minority demonstrating a movement of attachment functions from peers to mothers over the year, and others reporting no movement in attachment from mothers to peers.

Although adolescents in the current research reported using friends and romantic partners as attachment figures, it remains unclear if these peer relationships function as actual attachment relationships. Temporal stability aside, friendships do not meet the criteria for an attachment bond in that they are nonexclusive (Berndt, 1999), not motivated by the sexual system nor serve the biological function of reproduction (Hazan & Zeifman, 2008). Most adolescents have a preferred peer yet these friendships are not always mutual or intensive in nature (Brown & Klute, 2003). Existing friendships are replaced when adolescents develop new interests and perspectives or enter new environments which are better facilitated and supported by new friends (Cairns et al., 1995; Collins & Repinski, 1994; Furman & Simon, 1998).

Present results indicate adolescents reported similar attachment strength to friends across both assessment times, yet the high 'churn' rate of friendships demonstrated makes it improbable that the same friends were chosen for attachment functions a year apart. Instead, both previous and current longitudinal results suggest that adolescents orient from parents to friends for social support and attachment needs as part of the individuation process from parents, rather than as a function of a particular friendship (Allen & Land, 1999; Degirmencioglu et al., 1998; Friedlmeier & Granqvist, 2006). This experimentation with friendships for attachment functions is rendered more apparent by current longitudinal analyses indicating a movement of attachment functions to romantic partners from friends rather than parents when romantic partners were introduced into the adolescent's relationship network. In the absence of committed friendships lasting at least 5.5 years in length (Fraley & Davis, 1997), it appears that

friends may operate as a 'way-station' in the process of attachment reorganization from parents to romantic partners.

Although romantic relationships by definition involve behaviors that are inherent to the attachment process (Ainsworth, 1989; Hazan & Zeifman, 1994), romantic partners become increasingly important attachment figures only through age and experience (Connolly & Johnson, 1996; Laursen & Williams, 1997). Developmental changes are experienced both within and over several romantic relationships, wherein adolescents acquire more experiences with their romantic partners and feel more comfortable using them for various needs (Furman & Wehner, 1997). Moreover, adolescents in contemporary Western cultures are encouraged to experiment with closeness without making long-term commitments in their romantic relationships (Adams et al., 2001) with the vast majority having had some romantic experiences by middle adolescence (i.e., 15-16 years old) (Furman et al., 2009).

Therefore, adolescents are expected to increasingly select their romantic partners for attachment functions by late adolescence irrespective of the length of their romantic relationships, as demonstrated in Wave 2. This increased utility of romantic partners may also reflect a matter of convenience wherein those with romantic partners were found to orient towards their partners regardless of their level of need (Campa et al., 2009). Young adults can relatively quickly begin seeking all attachment functions from their romantic partners without meeting the two-year threshold (Heffernan et al., 2012), and thus further research is required to investigate if the same process occurs for late adolescents' romantic relationships, and whether the roles that attachment functions play in these newer adolescent romantic relationships are qualitatively different from those relationships of more than two years' duration.

In sum, the findings of the current research suggest that the process of attachment formation in adolescence does not fit with the traditional view of attachment

relationships. Unlike attachment in infancy or adulthood where attachment is selectively directed at the primary caregiver and a romantic partner respectively (Bowlby, 1969/1982), adolescents appear to experiment with multiple peer relationships simultaneously, investing and withdrawing attachment functions in each relationship depending on convenience and context (Campa et al., 2009; Mayseless, 2005; Scharf & Mayseless, 2007). Some instability in friendships and romantic relationships is normative and considered developmentally appropriate given the extent of dramatic changes postulated to occur in adolescence (Collins & Repinski, 1994; Shulman & Collins, 1995).

Consequently, present findings suggest it may be more useful to acknowledge that adolescent peer relationships increasingly take on aspects of attachment functions even if these functions are not as synchronous or intense as in earlier relationships with parents (Allen, 2008). Given the important distinction between attachment as a process and attachment as an outcome (Campa et al., 2009), it is imperative for future studies to identify new attachment markers that demarcate the process of attachment formation as they uniquely appear in peer relationships.

9.3.3 Effects of Evolving Interpersonal Relationships on Adolescent Adjustment

Supportive relationships with parents and peers are proposed to play a crucial role in psychological wellbeing (Laursen & Collins, 2009) especially during important life transitions, such as adolescence (Buist et al., 2004b). Parent and peer relationships are assumed to be positive influences on development through the provision of emotional support and of closeness and continuity (Lopez & Gover, 1993). Yet, results from the intercorrelations and regression equations of this study indicate that the associations between attachment relationships and adolescent adjustment were more subtle and

dependent on a complex interplay of factors. There was also scant evidence of a longitudinal link between normative attachment reorganization and psychological health. Rather, consistent with existing research (e.g., Mikulincer & Shaver, 2007) was the overarching finding of the prevailing influences of global working models on adolescent psychological health. Several implications for future research investigating the importance of interpersonal relationships on adolescent wellbeing are discussed.

Although all individuals are postulated to establish attachment bonds (Ainsworth et al., 1978), attachment strength, or the extent to which an attachment figure is the target of attachment behaviors (Feeney, 2004), can vary between different attachment relationships (Siebert & Kerns, 2009). On one level, the amount of attachment strength demonstrated works in conjunction with the identity of the attachment figure to predict adolescent psychological health. Cross-sectional results revealed that whilst attachment relationships were not consistently contributors to adolescent adjustment after accounting for existing attachment models, fathers were directly predictive of adolescent stress despite being used least for all attachment functions. This finding accords with previous research demonstrating that adolescents who failed to identify fathers as attachment figures or whose father occupied quarternary positions in the adolescent attachment hierarchy were at greater risk of both internalizing and externalizing behaviors (Rosenthal & Kobak, 2010). By contrast, mothers did not uniquely predict adolescent adjustment despite remaining central attachment figures for all adolescents. Collectively, these results seem to suggest it is the failure to form attachment to members of the attachment network which is not developmentally normal, particularly in relation to parents who are supposedly the primary attachment targets of adolescents (Fraley & Davis, 1997; Hazan & Zeifman, 1994).

However, fathers were found to be least used among attachment figures in other studies (e.g., Freeman & Brown, 2001; Markiewicz et al., 2006), indicating that this

appears a normative occurrence amongst adolescents. Whereas some research has highlighted the importance of fathers for facilitating independence and mastery over emotional and social functioning (Hazen et al., 2010; Lamb, 1997; 2002; Rice et al., 1997), the lack of father involvement may provide an alternative explanation for the higher adolescent stress levels presently demonstrated (Boyce, Essex, Alkon, Goldsmith, Karemer, & Krupfer, 2006; Flouri & Buchanan, 2003). Parental marital status was not established in this research, and thus future studies should determine if the lack of father involvement due to marital separation or divorce is otherwise implicated in adolescent maladjustment.

On another level, age or timing relative to other adolescents in the larger peer context appears an important determinant of the effects of interpersonal relationships on adolescent wellbeing. Age was found to interact with attachment strength to friends and romantic partners for romantically-involved adolescents to produce differential outcomes for adolescent psychological health. Early adolescent involvement in romantic relationships has been linked to psychological maladjustment (Brendgen et al., 2002; Joyner & Udry, 2000; Meeus, Branje, & Overbeek, 2004), with current cross-sectional results indicating that greater reliance on romantic partners and less attachment to friends predicted higher levels of stress and depression respectively. For late adolescents, the formation of a romantic relationship typically results in less utility of friends for relationship provisions (Reis, Lin, Bennett, & Nezlek, 1993) as romantic involvement becomes more normative with age (Markiewicz et al., 2006). Cross-sectional findings indicated that romantically-involved late adolescents who used friends more for attachment functions were at greater risk of depression.

Theorists have stressed the functional importance of various relationships in fulfilling different social provisions for the maturing adolescent (Lempers & Clark-Lempers, 1992; Sullivan, 1953). In this research, friendships and romantic relationships

appear to perform compensatory roles wherein early adolescents prematurely orient from friends to romantic partners for attachment needs whilst late adolescents delay moving attachment functions from friends to romantic partners. These preliminary observations accord with an attachment reorganization perspective that deviations from the normative reorientation of attachment needs are associated with adolescent maladjustment (Berman & Sperling, 1991; Kobak et al., 2007; Rosenthal & Kobak, 2010). However, support for the aforementioned explanation is circumstantial as these findings relate only to adolescents with romantic partners and could not be tested longitudinally here due to inadequate sample sizes. Additionally, longitudinal findings did not evince much association between normative attachment reorganization and adolescent wellbeing, with expected changes in attachment relationships related to another adjustment outcome, namely School Attitudes. These differential peer influences on adolescent adjustment may instead be tied to the developmental significance of romantic relationships for each age group (Furman & Wehner, 1997; Shulman & Scharf, 2000).

Alternatively, more associations between changes in attachment relationships and adolescent wellbeing could have been established if psychological indices indicative of externalizing behaviors were used. Parents and peers affect adolescents' choices and actions (Wood, Read, Mitchell, & Bran, 2004) with interpersonal contexts repeatedly implicated in analyses of the incidence and development of externalizing behaviors (van Dulmen, Goncy, Haydon, & Collins, 2008), such as through parenting behaviors (Vitaro et al., 2000), affiliation with deviant peers (Claes et al., 2005) or involvement in a romantic relationship (Joyner & Udry, 2000; Zimmer-Gembeck et al., 2001). The present longitudinal analyses indicated that changes in attachment relationships were predictive of adolescent school attitudes, which was the adjustment variable used most reflective of externalizing behaviors.

By contrast, attachment expectancies are more reflective of the negative self-schemas that resemble the patterns of expectations and thinking demonstrated in internalizing indices such as depression, low self-esteem (Davila et al., 2005; Kobak et al., 1991; Sroufe et al., 1999) and difficulties in coping with stress (Bottonari et al., 2007; Hankin, Kassel, & Abela, 2005), which were the other psychological health measures used in this dissertation. Specifically, insecure attachment models predispose adolescents to negative self-schemas that precipitate the negative beliefs, attitudes, and cognitions underlying psychopathology (Wilkinson, 2006a). Attachment processes may be more consequential for some domains of intrapersonal adjustment than others (Cooper et al., 2004), and future research should incorporate other indices of externalizing behaviors, such as delinquency and risk-taking behaviors, to obtain a more holistic understanding of the contributions of individual attachment relationships towards adolescent adjustment.

Attachment working models purportedly become consolidated by adolescence (Bretherton, 1985; Kaslow et al., 2000; Weiss, 1982), and maintain a high rate of stability over extended periods of time in the absence of major life events (Fraley, 2002b; Scharfe, 2003). The present finding that Anxiety was a stronger predictor of adolescent adjustment than Avoidance mirrors previous research with similar results (Klohn et al., 2005; Mikulincer & Shaver, 2007; Zhang et al., 2011). Strong relationships between global attachment models and adolescent adjustment were established both cross-sectionally and longitudinally in this dissertation, and it could be argued that attachment expectancies, relative to attachment strength, are better indicators of adolescent psychological health. Changes in attachment relationships are deemed normative during the process of attachment reorganization, and thus attachment strength may not be a clear predictor of adolescent wellbeing (Friedlmeier & Granqvist, 2006; Hazan & Zeifman, 2008). Moreover, adolescents demonstrating high attachment

anxiety or avoidance engage secondary and suboptimal emotion-regulating strategies (Diamond & Hicks, 2004) that result in the inability and unwillingness respectively to derive emotion-regulating benefits from contact with attachment figures (Feeney, 1999) even if high attachment strength is reported to them.

Current cross-sectional findings and previous studies indicated differential effects of attachment anxiety and avoidance on the movement of attachment functions (Fraley & Davis, 1997; Freeman & Brown, 2001; Friedlmeier & Granqvist, 2006; Markiewicz et al., 2006). However, insufficient statistical power prevented this study from determining the influences of global attachment models on both changes in individual attachment relationships and the rate of attachment reorganization longitudinally, and warrants further investigation. Life events and stressors that may impact on adolescents' choice of attachment targets (Hortacsu & Aydin, 2007; Mayseless, 2004) and result in changes in attachment models (Scharfe & Bartholomew, 1994; Scharfe & Cole, 2006) or adolescent adjustment (Ge & Conger, 2000; Meadows et al., 2006) were also unaccounted for here. That said, adolescent psychological health remained constant over the year, and the impact of life events and stressors on attachment relationships, individual differences in attachment models, and adolescent wellbeing was likely minimal for most of the sample.

Overall, global attachment models were most predictive of adolescent adjustment in the present research whereas the effects of attachment strength were more nuanced and complicated. These findings resemble those of Coupe (2008) who demonstrated stronger associations between global attachment models and psychological health than between attachment strength and psychological health, albeit in a sample of older adults. Attachment strength, however, does not reflect the quality of the attachment relationship (Feeney, 2004), and an attachment figure may be used to fulfill attachment functions even if the relationship itself is of poor quality. Relationship quality has been

shown to be a reliable predictor of adjustment outcomes in both the IPPA and social support literature (Antonucci, 2001; Davis, Morris, & Kraus, 1998; Wilson & Wilkinson, 2012). Relationship quality was however not explicitly assessed in this dissertation due to the conceptual and methodological limitations of the IPPA as previously discussed.

Moreover, individuals can have varying attachment experiences in different attachment relationships (Collins et al., 2004; Fraley & Brumbaugh, 2004; Pietromonaco & Feldman Barrett, 2000), and the utility of a global measure of attachment may obscure the more relationship-specific attachment models formed with significant others (Cozzarelli et al., 2000; Pierce & Lydon, 2001; Ross & Spinner, 2001). These contextualized working models of specific attachment figures were previously shown to differentially predict adolescent adjustment beyond the influences of general attachment models (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Klohnen et al., 2005). Therefore, researchers should consider assessing both the relationship-specific attachment models and the quality of individual attachment relationships to more accurately discern the importance of interpersonal relationships for adolescent adjustment.

9.4 Limitations

A number of limitations of aspects of this research have been outlined in previous chapters and therefore only key issues will be discussed here. Firstly, this research is limited by its reliance on a single self-report measure of adolescent attachment networks, the modified ANQ. Adolescents' perceptions of their experiences, while valid, may not accurately reflect their actual attachment behaviors (Freeman & Brown, 2001). It is likely that the administrative context for the first questionnaire increased the

salience of peer relationships with adolescents probably seated with friends or romantic partners when completing the self-report in their classrooms.

The methodological limitations of the modified ANQ casts further doubt on the extent to which these peer relationships can be classified as proper attachment relationships. Despite reporting similar utility of romantic partners and friends as their mothers, adolescents in this research may be using peers as ad-hoc attachment figures for Secure Base in contexts involving daily stressors or low levels of attachment system activation (Kobak et al., 2007; Rosenthal & Kobak, 2010; Waters & Cummings, 2000). Moreover, consistent attachment to parents was reported across twelve months, with adolescents reverting back to mothers for attachment needs in the event of romantic relationship dissolution.

Future research could incorporate other methodologies of adolescent attachment to increase the validity of adolescents' self-reports, such as a bull's eye hierarchical mapping technique (e.g., Rowe & Carnelley, 2005) or attachment priming (e.g., Mikulincer, Gillath, & Shaver, 2002) that bypass concerns regarding cognitive accessibility of attachment figures and elicit comparatively less guarded responses than self-report questionnaires (Aron et al., 1992; Hazan et al., 2004). Alternatively, direct observations of relationship interactions would allow investigation of the nuanced relationship processes that occur between adolescents and their attachment figures (Madsen & Collins, 2008).

Secondly, despite considerable efforts to re-engage the sample, the significant attrition in sample size prevented conducting more sophisticated longitudinal analyses involving all demographic factors (i.e., age, gender, and romantic status) and attachment models simultaneously. The reduced sample size of adolescent males in Wave 2 made it unfeasible to determine if the potential 'lag' exhibited relative to adolescent females in the cross-sectional study was reflective of cohort effects or a genuine difference in

attachment reorganization. Adolescent males purportedly catch up with adolescent females in their use of friends for attachment and support (Helsen et al., 2000; Nomaguchi, 2008; Way & Greene, 2006), and a larger sample of adolescent males would enable investigation into potential gender differences in the longitudinal process of attachment reorganization.

Additionally, the small number of romantically-involved early adolescents sampled in Wave 2 restricted the ability to determine if early adolescents demonstrated similar patterns of attachment strength to peers as reported by late adolescents in the longitudinal study. Previous studies have indicated both qualitative and quantitative differences between early and late adolescents in the utility of romantic partners for support (Connolly & Johnson, 1996; Markiewicz et al., 2006). Future longitudinal studies could examine how romantically-involved early and late adolescents differentially use their attachment figures over time.

Thirdly, twelve months could have been insufficient for documenting both the longitudinal sequence of attachment reorganization and the evolving influences of attachment relationships on adolescent adjustment. Attachment reorganization is postulated to occur gradually over adolescence, with several patterns of change in attachment relationships over twelve months reported here and in Friedlmeier and Granqvist's (2006) study. Research spanning five to ten years, or from early adolescence to young adulthood, may more appropriately capture the sequence model of attachment formation proposed by Hazan and Zeifman (1994, 1999).

Similarly, psychological maladjustment is suggested to adopt a developmental progression across adolescence (Cicchetti & Toth, 1998; Sroufe, Duggal, Weinfield, & Carlson, 2000), where the effects of problematic relationship patterns and patterns of emotional regulation accumulate over time and become increasingly detrimental to psychological health (Caspi, Bern, & Elder, 1989; Cooper et al., 2004). Whilst this

research found no evidence of changes in psychological health over twelve months, the effects of changing relationships on adolescent wellbeing may become apparent in future studies examining longer durations.

Only two data points of measurement were used in this study, and the direction of influence between attachment relationships and adolescent adjustment is currently unclear. Although age was found to moderate the relationship between peer attachment relationships and adjustment for romantically-involved adolescents, this dissertation was unable to conclude if premature or delayed reorientation of attachment needs is responsible for psychological maladjustment in the absence of longitudinal analyses. It may be that psychological health leads to higher quality networks although existing research using the AAI would suggest that relationship networks lead to better psychological health (Allen et al., 2007; Carlson, 1998).

Variables, such as parental marital status, life events or living arrangements, and levels of pre-existing psychological health and attachment reorganization that occurred prior to and between assessment points were also unaccounted for. It is uncertain how the associations between interpersonal relationships and adolescent psychological wellbeing may have presented prior or between these two data points (Friedlmeier & Granqvist, 2006; Wei et al., 2005). As longitudinal designs with two waves of data are argued to contain minimal information on individual change (Willet & Sayer, 1994; Willet, Singer, & Martin, 1998), longitudinal studies incorporating more than two waves of data collection will enable firmer conclusions to be drawn regarding the implications of changing relationships for adolescent adjustment.

9.5 Future Research

Further replication is necessitated to confirm the validity of current findings. In highlighting the difficulties associated with relying on self-reports to measure adolescent attachment, future research should consider assessing attachment at the level of cognitive representations together with self-reports (e.g., Who-To, ANQ) to activate the attachment-behavioral system and partial out the influences of attachment models or relationship quality on normative attachment processes. Specifically, attachment priming has been used with adults to increase the accessibility of mental representations of attachment figures in threat-related contexts (Mikulincer et al., 2002). This operates on the premise that the stress-attachment link is a universal, inborn cognitive structure that automatically activates when faced with stressors (Cosmides & Tooby, 1987) and influences mental processes before it reaches consciousness (Wegner & Smart, 1997). Participants reacted to threat contexts with heightened accessibility of the names of attachment figures in the Who-To scale whereas there was no effect on representations of other people who were listed as close but not serving attachment functions, known but not close, and unknown (Mikulincer et al., 2002). This effect occurred both when an attachment-related (e.g., separation) and an attachment-unrelated (e.g., failure) threat word was primed and was found for all individuals regardless of attachment styles (Mikulincer et al., 2002).

This novel method of investigating normative attachment phenomenon would be useful for research with adolescents as it creates a stressor that activates the attachment system without eliciting actual danger, and bypasses concerns about the cognitive accessibility of attachment figures and the presence of overt attachment-related behaviors. Future studies could address questions regarding the organization of adolescent attachment hierarchies by determining if participants are reliably quicker to

recognize the names or roles (e.g., mother, best friend) of some attachment figures than others or alternatively priming with names of attachment figures and measuring reactions time on lexical decision or Stroop color-naming tasks (e.g., Baldwin, 2007; Banse, 1999, 2001; Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer et al., 2002)

This priming method only partially validates self-reports in its identification of attachment figures reported as genuine attachment figures, and a systematic assessment of the four attachment functions as markers of attachment behaviors is still warranted. Qualitative research undertaken to identify and assess situations wherein attachment figures are used will enable researchers to more accurately ascertain attachment markers pertinent to adolescents, and if these accord with the items identified in the self-report measures. Should attachment functions in existing self-reports not be validated, measures assessing these new attachment markers could be constructed and subsequently validated through cognitive experiments such as attachment priming or through behavioral observations and experiments.

9.6 Adolescent Attachment and Social Media

Adolescents are the forerunners of the relationship revolution, innovating new ways of initiating and maintaining interpersonal relationships. Youths are the first adopters and most frequent users of email, social network sites, and instant/text messaging, with these social media key for staying connected with existing friends and family, and for creating new relationships (Gross, 2004; Mesch, Talmud, & Quan-haase, 2012). These new forums of communication represent an extension rather than a replacement of existing mediums of interaction and relational maintenance (Baym, 2002; Ramirez & Broneck, 2009). Social media has implications for how researchers understand

relationships and measure attachment in adolescence, especially since these tools used to perform important relational tasks might also alter the ways in which these tasks are enacted (Bryant, Marmo, & Ramirez, 2011).

Findings that adolescents can now virtually “hang out” with friends round-the-clock regardless of where they are or what they are doing (Ito et al., 2009; Subrahmanyam & Smahel, 2011) beget the question of whether virtual proximity can replace the need for actual proximity among adolescents. Adolescents are also using online spaces to negotiate developmental tasks especially the need for intimacy and connection to others (Reich, Subrahmanyam, & Espinoza, 2012). While social media can allow adolescents to more deeply self-disclose and enhance the quality of their relationships (Blais, Craig, Peplar, & Connolly, 2008; Valkenburg & Peter, 2009a, 2011), online communications may also be less intimate than traditional face-to-face interactions (Cummings, Butler, & Kraut, 2002). Pertinent questions to address include whether the practice of self-disclosure and social support facilitated by online communication is akin to the creation of safe haven, and whether the utility of social media with its controllability of communication and sometimes reduced nonverbal cues (Schouten, Valkenburg, & Peter, 2007) affects the extent or quality of relationships created.

Furthermore, research has demonstrated the presence of a communication hierarchy in social media similar to that reported in attachment networks (Mesch et al., 2012; Ramirez & Brosneck, 2009). For example, most youth report having regular contact with only a small portion of the vast number of “friends” that they have on their social network sites (Subrahmanyam, Reich, Waechter, & Espinoza, 2008; Thelwell, 2008). Exploration of whether “friends” on social network sites constitute genuine friendships is warranted, especially since communication patterns and topic multiplexity were shown to be largely embedded in existing relationships with whom a close tie was already reported (Mesch et al., 2012). The importance of understanding adolescents’ use

of social media using relational variables should also not be undermined (Kadushin, 2011; Rainie & Wellman, 2012).

Recent research has found adolescents to primarily use social media as a channel for maintaining and enhancing existing relationships (Gross, 2004; Lenhart, Purcell, Smith, & Zickuhr, 2010; Valkenburg & Peter, 2007), with these interactions offering another context to interact with others (Valkenburg & Peter, 2009b) but not interfering with the likelihood of calling or meeting offline friends in person (Bargh & McKenna, 2004). Based on these findings, it is speculated that social media assists relationship formation, but perhaps alters the extent or expression of attachment in adolescence, which warrants further investigation. Although the use of social media was not addressed in the present dissertation, future research should investigate and preferably harness social media in their attempts to more fully comprehend the psychosocial development of adolescents (Valkenburg & Peter, 2011).

9.7 Clinical Implications

Preliminary indications of this research suggest that attachment-based interventions and therapeutic work from both cognitive-behavioral (e.g., Cognitive-behavioral Therapy) and interpersonal (e.g., Interpersonal Psychotherapy) frameworks are potentially effective ways of addressing psychological maladjustment in adolescents. Interventions grounded in an understanding of the adolescent's attachment expectancies and patterns of emotional and behavioral regulation can direct attention towards altering maladaptive patterns of coping and interpersonal interactions that perpetuate poor psychological health. Further, recognizing deviations from the typical timing of attachment reorganization will enable interventions to be targeted appropriately at adolescents' interactions with individuals in their relationship networks.

For adolescents demonstrating a delayed reorganization of attachment needs from parents, techniques to foster autonomy and increase self-reliance or to increase social self-efficacy or self-disclosure will enable adolescents to feel more connected and empowered in their peer relationships (Wei et al., 2005). Increasing the quality of the parent-adolescent relationship and promoting secure base behaviors with parents in the event of premature reorganization towards peers may allow adolescents to feel validated and secure in their parental relationships, and less susceptible to deviant peer influences and subsequent problem behaviors (Kobak et al., 2007). In sum, the present findings emphasize the importance of understanding both the interpersonal and intrapersonal worlds of adolescents in the promotion of positive adolescent wellbeing.

9.8 Conclusion

In examining adolescent relationship networks and how changes in interpersonal relationships over time predict adolescent adjustment using attachment theory as a conceptual framework, the present dissertation contributes to the empirical knowledge of adolescent development by highlighting the complexities of attachment formation in adolescence, and questioning assumptions that this process operates similarly in adolescence relative to infancy or adulthood. Firstly, attachment transference implies an “all-or-nothing” movement of attachment functions that seems less relevant to adolescents. In this research, there was not a displacement of existing attachment figures but rather the utility of multiple attachment figures for the same attachment functions as adolescents expanded their attachment networks. Preferences for specific attachment figures to fulfill attachment needs therefore appear less clearly defined as compared to infancy or adulthood.

Secondly, current findings indicated that adolescents experiment with different peer relationships, such that attachment is formed with classes of peer relationships (e.g.,

friends, romantic partners) rather than specific individuals. These peer relationships therefore do not conform to the traditional view of attachment bonds as exclusive dyads formed with specific individuals (Bowlby, 1973; Schuengel & van IJzendoorn, 2001). Moreover, this research demonstrated that attachment to peers actually increased over twelve months despite a high turnover of friendships and romantic relationships. Assuming that these peer relationships are genuine attachment bonds, adolescents would seem to reorient towards peers for attachment needs within a smaller timeframe than stipulated by previous research (e.g., Fraley & Davis, 1997; Hazan & Zeifman, 1994).

The present dissertation has drawn attention to the methodological limitations of current measures of attachment strength which make it difficult to ascertain if functions served by peers are prompted by the attachment system or by other behavioral systems (e.g., affiliative, sexual, or exploratory) that take precedence during adolescence (Kerns et al., 2006; Kobak et al., 2007). Increased sophistication of cognitive and regulatory abilities in adolescence (Allen, 2008; Marvin & Britner, 2008) suggests that the behavioral indicators used to demarcate attachment in infancy may not be as easily identified when measuring adolescent attachment, especially in consideration of peer relationships. It is argued that arranging attachment figures into an attachment hierarchy during adolescence is problematic for these reasons. Further research is warranted to measure attachment in adolescence using alternative methods as suggested earlier in this chapter, and to identify new markers of attachment that accurately describe attachment formation in adolescence.

The sequential movement of attachment functions has often been assumed and thus important to test longitudinally despite insufficient statistical power in the present study to conduct more complex analyses. Findings of this research suggest that attachment reorganization in adolescence is complicated, with trends as predicted by attachment

theory supported at the level of specific attachment figures juxtaposed against significant variability in attachment reorientation over one year. The need to investigate attachment reorganization over a protracted period of time is underscored by this research, to both elucidate the process of attachment formation in adolescence and to understand how the lengthening of time between sexual and social maturity in contemporary society (Costello et al., 2011; Sawyer et al., 2012) affects whom adolescents turn to for attachment functions.

Collectively, this dissertation has demonstrated that aspects of attachment theory can be applied directly to understanding adolescent interpersonal relationships, yet there are also features of attachment relationships unique to adolescence that require new conceptualizations to more appropriately encapsulate this process of relationship formation. Identification of markers exclusive to adolescent attachment is necessary and current measures of adolescent attachment require refinement to negotiate the complexities of adolescent relationships. Interpersonal relationships in adolescence are unique and multi-faceted, and warrant further investigation by adolescent development and attachment researchers alike to enhance understanding of this transformative period of human development.

This research was also undertaken in recognition of the significance of adolescence as a period of tremendous growth and transformations (Simpson, Janssen, Boyce, & Pickett, 2006) where the areas of greatest vulnerability in interpersonal relationships presumably occur when they potentially interfere with critical developmental tasks (Cicchetti & Toth, 1998; Sroufe, 1997; Zahn-Waxler, Llimes-Dougan, & Slattery, 2000). But contrary to popular depictions of adolescence as a period of “storm and stress”, the results of this dissertation suggest that the evolution of interpersonal relationships during this time has minimal impact on adolescent wellbeing.

Attachment theory assumes that variations to the norm create maladjustment in adolescent development (Bowlby, 1969/1982; Hazan & Zeifman, 1994), yet adolescents fluctuated in attachment over twelve months such that the contributions of individual relationships to adolescent wellbeing could not be formalized in this study. Present findings indicated that greater attachment strength reported did not necessarily translate into specific attachment figures having more importance for psychological health. Instead, the effects of attachment relationships on adolescent adjustment were subtle and complicated by broader interpersonal contexts. Specifically, friends and romantic partners were found to predict adolescent adjustment, yet this occurred relative to the broader peer context with the effects of peer relationships mitigating with age. It is normative to be attached to attachment figures (Bowlby, 1969/1982), and thus changes in interpersonal relationships do not appear unduly detrimental to adolescent psychological health as long as attachment needs continue to be met.

Rather, attachment working models were found consistently more predictive of adolescent wellbeing in the present research. This highlights the importance of early attachment relationships for predisposing adolescents to the negative self-schemas and suboptimal emotion-regulating strategies that perpetuate psychopathology (Diamond & Hicks, 2004; Wilkinson, 2006b). These results would therefore suggest that interventions for positive adolescent adjustment be focused on obtaining greater insight into adolescents' intrapersonal worlds, and of their habitual patterns of behavioral and emotional regulation. Interventions must be tailored to account for both the individual variability present in adolescent development and the external factors and environmental contexts surrounding the adolescent. The role of the family as a focal point of intervention should also not be underestimated even as adolescents begin to reorient toward peers.

Despite its limitations, this research has provided insight into the associations between the adolescent's internal world, interpersonal relationships, and psychological wellbeing, and contributes to the empirical knowledge of attachment formation in adolescence. Advancing the application of attachment theory to adolescence, in turn, will enhance wider knowledge of adolescent development and adjustment. This further understanding is essential to facilitate the promotion of preventative and positive interventions (Gonzalez et al., 2007; Zarrett & Lerner, 2008) aimed at reversing the increasing trend of psychopathology demonstrated among adolescents in a rapidly changing world.

References

- Aboud, F. F., & Mendelson, M. J. (1996). Determinants of friendship selection and quality: Developmental perspectives. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 87-112). New York, NY: Cambridge University Press.
- ACT Education and Training Directorate (n.d.). High Schools (Public). Retrieved from http://www.det.act.gov.au/school_education/directory_of_schools/high_schools_act_government
- Adams, G. R., & Berzonsky, M. D. (2003). Introduction by the editors. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. xxi-xxvii). Malden, MA: Blackwell Publishing Ltd.
- Adams, R. E., Laursen, B., & Wilder, D. (2001). Characteristics of closeness in adolescent romantic relationships. *Journal of Adolescence, 24*, 353-363.
- Adams, G. R., Ryan, B. A., Ketschis, M., & Keating, L. (2000). Rule compliance and peer sociability: A study of family process, school-focused parent-child interactions, and children's classroom behavior. *Journal of Family Psychology, 14*, 237-250.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Ainsworth, M. D. S. (1967). *Infancy in Uganda: Infant care and the growth of love*. Baltimore: John Hopkins University Press.
- Ainsworth, M. D. S. (1969). Object relations, dependency, and attachment: A theoretical review of the infant-mother relationship. *Child Development, 40*, 969-1025.

- Ainsworth, M. D. S. (1973). The development of infant-mother attachment. In B. Caldwell & H. Ricciuti (Eds.), *Review of Child development research: Vol. 3.* (pp. 1-94). Chicago, IL: University of Chicago Press.
- Ainsworth, M. D. S. (1982). Attachment: retrospect and prospect. In C. M. Parkes & J. Stevenson-Hinde (Eds.), *The place of attachment in human behavior* (pp. 3-30). New York, NY: Basic Books.
- Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, *44*, 709-716.
- Ainsworth, M. D. S. (1991). Attachments and other affectional bonds across the life cycle. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 33-51). London, UK: Tavistock/Routledge.
- Ainsworth, M. D. S., Bell, S. M., & Stayton, D. (1974). Infant-mother attachment and social development. In M. P. Richards (Ed.), *The introduction of the child into a social world* (pp. 99-135). London, UK: Cambridge University Press.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, *46*, 333-341.
- Ainsworth, M. D. S. & Wittig, B. A. (1969). Attachment and the exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behaviour: Vol. 4.* (pp. 113-136). London: Methuen.
- Akers, J. F., Jones, R. M., & Coyl, D. D. (1998). Adolescent friendship pairs: Similarities in identity status development, behaviors, attitudes, and intentions. *Journal of Adolescent Research*, *13*, 178-201.

- Allen, J. P. (2008). The attachment system in adolescence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp.419-435). New York, NY: The Guilford Press.
- Allen, J. P., Hauser, S. T., Bell, K. L., & O'Connor, T. G. (1994). Longitudinal assessment of autonomy and relatedness in adolescent-family interactions as predictors of adolescent ego development and self-esteem. *Child Development, 65*, 179-194.
- Allen, J. P., Hauser, S. T., & Borman-Spurrell, E. (1996). Attachment theory as a framework for understanding sequelae of severe adolescent psychopathology: An 11-year follow-up study. *Journal of Consulting and Clinical Psychology, 64*, 254-263.
- Allen, J. P., & Land, D. (1999). Attachment in adolescence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: theory, research, and clinical implications* (pp. 319-335). New York, NY: The Guilford Press.
- Allen, J. P., & Manning, N. (2007). From safety to affect regulation: Attachment from the vantage point of adolescence. *New Directions for Child and Adolescent Development, 117*, 23-39.
- Allen, J. P., Marsh, P., McFarland, C., McElhaney, K. B., Land, D. J., Jodl, K. M. et al. (2002). Attachment and autonomy as predictors of the development of social skills and delinquency during midadolescence. *Journal of Consulting and Clinical Psychology, 70*, 56-66.
- Allen, J. P., McElhaney, K. B., Kupermine, G. P., & Jodl, K. M. (2004). Stability and change in attachment security across adolescence. *Child Development, 75*, 1792-1805.
- Allen, J. P., McElhaney, K. B., Land, D. J., Kupermine, G. P., Moore, C. W., O'Beirne-Kelly, H. et al. (2003). A secure base in adolescence: Markers of attachment security in the mother-adolescent relationship. *Child Development, 74*, 292-307.

- Allen, J. P. & Miga, E. M. (2010). Attachment in adolescence: A move to the level of emotion regulation. *Journal of Social and Personal Relationships, 27*, 181-190.
- Allen, J. P., Moore, C., Kupermine, G., & Bell, K. (1998). Attachment and adolescent psychosocial functioning. *Child Development, 69*, 1406-1419.
- Allen, J. P., Porter, M., McFarland, C., McElhaney, K. B., & Marsh, P. (2007). The relation of attachment security to adolescents' paternal and peer relationships, depression, and externalizing behavior. *Child Development, 78*, 1222-1239.
- Allgood-Merten, B., Lewinsohn, P. M., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology, 99*, 55-63.
- Allison, M. D., & Sabatelli, R. M. (1988). Differentiation and individuation as mediators of identity and intimacy in adolescence. *Journal of Adolescent Research, 3*, 1-16.
- Ammaniti, M., van IJzendoorn, M. H., Speranza, A. M., & Tambelli, R. (2000). Internal working models of attachment during late childhood and early adolescence: An exploration of stability and change. *Attachment and Human Development, 2*, 328-346.
- Anderson, B. J., Holmes, M. D., & Ostresh, E. (1999). Male and female delinquents' attachments and effects of attachments on severity of self-reported delinquency. *Criminal Justice and Behavior, 26*, 435-452.
- Antonucci, T. C. (2001). *Social relations: An examination of social networks, social support, and sense of control*. San Diego, CA: Academic Press.
- Arbona, C., & Power, T. G. (2003). Parental attachment, self-esteem, and antisocial behaviors among African American, European American, and Mexican American adolescents. *Journal of Counseling Psychology, 50*, 40-51.
- Archibald, A. B., Graber, J. A., & Brooks-Gunn, J. (2003). Pubertal process and physiological growth in adolescence. In G. R. Adams & M. D. Berzonsky (Eds.),

- Blackwell handbook of adolescence* (pp. 24-47). Malden, MA: Blackwell Publishing Ltd.
- Armor, D. J. (1975). *The causal analysis of change in non-experimental studies*. Rand Corporation.
- Armsden, G. C., & Greenberg, M. T. (1987). The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*, 427-454.
- Aron, A., Aron, E. N., & Smollan, N. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*, 596-612.
- Asher, S. R., & Coie, J. D. (1990). *Peer rejection in childhood*. Cambridge, UK: Cambridge University Press.
- Aten, M. J., Siegel, D., Enaharo, M., & Auinger, P. (2002). Keeping middle school students abstinent: Outcomes of a primary prevention intervention. *Journal of Adolescent Health*, *31*, 70-78.
- Australian Bureau of Statistics. (2008). *National survey of mental health and wellbeing: Summary of results, 2007* (no. 4326.0). Canberra, Australia.
- Australian Institute of Health and Wellbeing. (2008). *Making Progress: The health, development and wellbeing of Australia's children and young people*. Cat no. PHE104. Canberra: AIHW.
- Australian Institute of Health and Wellbeing. (2011). *Young Australians: Their health and wellbeing 2011*. Cat no. PHE 140. Canberra: AIHW.
- Azmita, M., Kamprath, N., & Linnelt, J. (1998). Intimacy and conflict: The dynamics of boys' and girls' friendships during middle childhood and early adolescence. In L. Meyer, H. Park, M. Grnot-Scheyer, I. Schwartz, & B. Harry (Eds.), *Making friends:*

The influences of culture and development (pp. 171-189). Baltimore: Brookes Publishing Company.

- Baldwin, M. W. (2007). On priming security and insecurity. *Psychological Inquiry, 18*, 157-162.
- Baltes, M. M., & Silverberg, S. (1994). The dynamics between dependency and autonomy: Illustrations across the life span. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.), *In Life-span development and behavior: Vol. 12*. (pp. 41-90). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bandura, A. (1982). Self-efficacy mechanisms in human agency. *American Psychologist, 37*, 122-147.
- Banse, R. (1999). Automatic evaluation of self and significant others: Affecting priming in close relationships. *Journal of Social and Personal Relationships, 16*, 803-821.
- Banse, R. (2001). Affective priming with liked and disliked persons: Prime visibility determines congruency and incongruency effects. *Cognition and Emotion, 15*, 501-520.
- Barber, J. G., & Delfabbro, P. (2000). Predictors of adolescent adjustment: Parent-peer relationships and parent-child conflict. *Child and Adolescent Social Work Journal, 17*, 275-288.
- Bargh, J. A., & McKenna, K. Y. A. (2004). The Internet and social life. *Annual Review of Psychology, 55*, 573-590.
- Barrera, M., Biglan, A. Jr., Ary, D., and Li, F. (2001). Replication of a problem behavior model with American Indians, Hispanic, and Caucasian youth. *Journal of Early Adolescence, 21*, 133-157.
- Bartholomew, K. (1990). Avoidance of intimacy: An attachment perspective. *Journal of Social and Personal Relationships, 7*, 147-178.

- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226-244.
- Bartholomew, K., & Moretti, M. (2002). The dynamics of measuring attachment. *Attachment and Human Development, 4*, 162-165.
- Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25-45). New York, NY: The Guilford Press.
- Bayer, A. M., Gilman, R. H., Tsui, A. O., & Hindin, M. J. (2010). What is adolescence?: Adolescents narrate their lives in Lima, Peru. *Journal of Adolescence, 33*, 509-520.
- Baym, N. K. (2002). Interpersonal life online. In L. Lievrouw & S. Livingstone (Eds.), *The handbook of new media: Social shaping and consequences of ICTs* (pp. 62-76). London, UK: Sage.
- Begg, S., Vos, T., Barker, B., Stevenson, C., Stanley, I., & Lopez, A. (2007). *The burden of disease and injury in Australia, 2003*. Canberra: AIHW.
- Belle, D., Burr, R., & Cooney, J. (1987). Boys and girls as social support theorists. *Sex Roles, 17*, 657-665.
- Belsky, J. (2002). Developmental origins of attachment styles. *Attachment and Human Development, 4*, 166-170.
- Benenson, F., & Benarroch, D. (1998). Gender differences in responses to friends' hypothetical greater success. *Journal of Early Adolescence, 18*, 192-208.
- Benner, A. D. (2011). Latino adolescents' loneliness, academic performance, and the buffering nature of friendships. *Journal of Youth and Adolescence, 40*, 556-567.

- Bennett, S. (2003). Is there a primary mum? Parental perceptions of attachment bond hierarchies within lesbian adoptive families. *Child and Adolescent Social Work Journal, 20*, 159-173.
- Berman, W. H., & Sperling, M. B. (1991). Parental attachment and emotional distress in the transition to college. *Journal of Youth and Adolescence, 20*, 427-440.
- Berndt, T. J. (1979). Developmental changes in conformity to peers and parents. *Developmental Psychology, 15*, 608-616.
- Berndt, T. J. (1982). The features and effects of friendship in early adolescence. *Child Development, 53*, 1447-1460.
- Berndt, T. J. (1999). Friends' influence on students' adjustment to school. *Educational Psychologist, 34*, 15-28.
- Berndt, T. J., Hawkins, J. A., & Hoyle, S. G. (1986). Changes in friendship during a school year: Effects on children's and adolescents' impressions of friendships and sharing with friends. *Child Development, 57*, 1284-1297.
- Berndt, T. J., & Hoyle, S. G. (1985). Stability and change in childhood and adolescent friendships. *Developmental Psychology, 21*, 1007-1015.
- Berndt, T. J., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development, 66*, 1312-1329.
- Berndt, T. J., & Perry, T. B. (1990). Distinctive feature and effects of early adolescent friendships. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *From childhood to adolescence: A transitional period?* (pp. 269-287). Newbury Park, CA: Sage.
- Bernier, A., & Dozier, M. (2002). Assessing adult attachment: Empirical sophistication and conceptual bases. *Attachment and Human Development, 4*, 171-179.
- Bifulco, A. (2002). Attachment style measurement: A clinical and epidemiological perspective. *Attachment and Human Development, 4*, 180-188.

- Bjorklund, D. F. (1999). *Children's thinking: Developmental function and individual differences*. Belmont, CA: Wadsworth.
- Blain, M. D., Thompson, J. M., & Whiffen, V. E. (1993). Attachment and perceived social support in late adolescence: The interaction between working models of self and others. *Journal of Adolescent Research, 8*, 226-241.
- Blais, J., Craig, W., Pepler, D., & Connolly, J. (2008). Adolescents online: The importance of Internet activity choices to salient relationships. *Journal of Youth and Adolescence, 37*, 522-536.
- Blakemore, S-J., & Choudhury, S. (2006). Development of the adolescent brain: implications for executive function and social cognition. *Journal of Child Psychology and Psychiatry, 47*, 296-312.
- Blatt, S. J. (1974). Levels of object representation in anaclitic and introjective depression. *Psychoanalytic Study of the Child, 29*, 107-157.
- Bosacki, S., Dane, A., Marini, Z., & YLC-CURA. (2007). Peer relationships and internalizing problems in adolescents: mediating role of self-esteem. *Emotional and Behavioural Difficulties, 12*, 261-282.
- Bosmans, G., Braet, C., Van Leeuwen, K., & Beyers, W. (2006). Do parenting behaviors predict externalizing behavior in adolescence, or is attachment the neglected 3rd factor? *Journal of Youth and Adolescence, 35*, 373-383.
- Bottonari, K. A., Roberts, J. E., Kelly, M. A. R., Kashdan, T. B., & Ciesla, J. A. (2007). A prospective investigation of the impact of attachment style on stress generation among clinically depressed individuals. *Behaviour Research and Therapy, 45*, 179-188.
- Bouchev, H. A., & Furman, W. (2003). Dating and romantic experiences in adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 313-329). Malden, MA: Blackwell Publishing Ltd.

- Boutelle, K., Eisenberg, M. E., Gregory, M. L., & Neumark-Sztainer, D. (2009). The reciprocal relationship between parent-child connectedness and adolescent emotional functioning over 5 years. *Journal of Psychosomatic Research, 66*, 309-316.
- Bowen, G. L., & Chapman, M. V. (1996). Poverty, neighborhood danger, social support, and the individual adaptation among at-risk youth in urban areas. *Journal of Family Issues, 17*, 641-666.
- Bowker, A. (2004). Predicting friendship stability during early adolescence. *Journal of Early Adolescence, 24*, 85-112.
- Bowker, J. C., Thomas, K. K., Norman, K. E., & Spencer, S. V. (2011). Mutual best friendship involvement, best friends' rejection sensitivity, and psychological maladaptation. *Journal of Youth and Adolescence, 40*, 545-555.
- Bowlby, J. (1958). The nature of the child's tie to his mother. *International Journal of Psycho-analysis, 39*, 350-373.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York, NY: Basic Books.
- Bowlby, J. (1977). The making and breaking of affectional bonds. *British Journal of Psychiatry, 130*, 201-210.
- Bowlby, J. (1979). *The making and breaking of affectional bonds*. London, UK: Tavistock.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Sadness and depression*. New York, NY: Basic Books.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1. Attachment*. New York, NY: Basic Books.
- Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. New York, NY: Basic Books.

- Boyce, W. T., Essex, M. J., Alkon, A. R. N., Goldsmith, H. H., Kraemer, H. C., & Kupfer, D. J. (2006). Early father involvement moderates biobehavioral susceptibility to mental health problems in middle childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 1510-1520.
- Boys, A., Marsden, J., Stillwell, G., Hatchings, K., Griffiths, p., & Farrell, M. (2003). Minimizing respondent attrition in longitudinal research: Practical implications from a cohort study of adolescent drinking. *Journal of Adolescence, 26*, 363-373.
- Bradford, S., & Feeney, J. A. (2000, October). *Associations between self-disclosure and two measures of attachment: Two ways of not doing the same thing*. Paper presented at the International Conference of the Mexican Association for Social Psychology, Guadalajara, Mexico.
- Branje, S. J. T., Frijns, T., Finkenauer, C., Engels, R., & Meeus, W. (2007). You are my best friend: Commitment and stability in adolescents' same-sex friendships. *Personal Relationships, 14*, 587-603.
- Branje, S. J. T., Hale III, W. W., Frijns, T., & Meeus, W. H. J. (2010). Longitudinal associations between perceived parent-child relationship quality and depressive symptoms in adolescence. *Journal of Abnormal Child Psychology, 38*, 751-763.
- Brendgen, M., Markiewicz, D., Doyle, A. B., & Bukowski, W. M. (2001). The relations between friendship quality, ranked-friendship preference, and adolescents' behavior with their friends. *Merrill-Palmer Quarterly, 47*, 395-415.
- Brendgen, M., Vitaro, F., Doyle, A. B., Markiewicz, D., & Bukowski, W. M. (2002). Same-sex peer relations and romantic relationships during early adolescence: interactive links to emotional, behavioral, and academic adjustment. *Merrill-Palmer Quarterly, 48*, 77-103.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.),

Attachment theory and close relationships (pp. 46-76). New York, NY: The Guilford Press.

- Brenning, K., Soenens, B., Braet, C., & Bosmans, G. (2011). An adaptation of the Experiences in Close Relationships Scale-Revised for use with children and adolescents. *Journal of Social and Personal Relationships, 28*, 1048-1972.
- Bretherton, I. (1980). Young children in stressful situations: The supporting role of attachment figures and unfamiliar caregivers. In G. V. Coelho & P. I. Ahmed (Eds.), *Uprooting and development* (pp. 179-210). New York, NY: Plenum Press.
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development, 50*, 3-35.
- Bretherton, I. (1990). Open communication and internal working models: Their role in the development of attachment relationships. In R. A. Thompson (Ed.), *Nebraska Symposium on Motivation: Vol. 36. Socioemotional development* (pp. 59-113). Lincoln: University of Nebraska Press.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*, 759-775.
- Bretherton, I., & Munholland, K. A. (2008). Internal working models in attachment relationships: Elaborating a central construct. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 102-130). New York, NY: The Guilford Press.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (2001). The bioecological theory of human development. In N. J. Smelser & P. B. Bates (Eds.), *International Encyclopedia of the Social and Behavioral Sciences: Vol. 10*. (pp. 6963-6970) Oxford: Elsevier.

- Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (5th ed., pp. 993-1028). Hoboken, NJ: John Wiley & Sons.
- Brooks-Gunn, J., & Petersen, A. (1991). Studying the emergence of depression and depressive symptoms during adolescence. *Journal of Youth and Adolescence*, 20, 115-119.
- Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University Press.
- Brown, B. B. (1999). "You're going out with whom?" Peer group influences on adolescent romantic relationships. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 291-329). Cambridge: Cambridge University Press.
- Brown, B. B. (2004). Adolescents' relationships with peers. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., 363-394). Hoboken, New Jersey: John Wiley & Sons.
- Brown, B. B., Eicher, S. A., & Petrie, S. D. (1986). The importance of peer group ("crowd") affiliation in adolescence. *Journal of Adolescence*, 9, 73-96.
- Brown, B. B., Feiring, C., & Furman, W. (1999). Missing the love boat: Why researchers have shied away from adolescent romance. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 1-16). New York, NY: Cambridge University Press.
- Brown, B. B., & Klute, C. (2003). Friendships, cliques, and crowds. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 330-348). Malden, MA: Blackwell Publishing Ltd.

- Brown, B. B., Larson, R., & Saraswathi, T. S. (2002). *The world's youth: Advances in eight regions of the globe*. New York, NY: Cambridge University Press.
- Brown, B. B., Mory, M., & Kinney, D. A. (1994). Casting adolescent crowds in relational perspective: Caricature, channel, and context. In R. Montemayor, G. R. Adams, & T. P. Gullota (Eds.), *Advances in adolescent development: Vol. 6. Personal relationships during adolescence* (pp. 123-167). London: Sage Publications.
- Brown, B. B., Von Bank, H., & Steinberg, L. (2008). Smoke in the looking glass: Effects of discordance between self-and peer-rated crowd affiliation on adolescent anxiety, depression, and self-feelings. *Journal of Youth and Adolescence*, *37*, 1163-1177.
- Bryant, B. K. (1994). How does social support function in childhood? In F. Nestmann & K. Hurrelmann (Eds.), *Social networks and social support in childhood and adolescence* (pp. 23-35). Berlin, German: De Gruyter.
- Bryant, E. M., Marmo, J., & Ramirez, A. (2011). A functional approach to social networking sites. In K. B. Wright & L. M. Webb (Eds.), *Computer-mediated communication in personal relationships* (pp. 3-20). New York, NY: Peter Lang Publishing.
- Buelow, G., McClain, M., & McIntosh, I. (1996). A new measure for an important construct: The Attachment and Object Relations Inventory. *Journal of Personality Assessment*, *66*, 604-623.
- Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development*, *61*, 1101-1111.

- Buhrmester, D. (1992). The developmental courses of sibling and peer relationships. In F. Boer & J. Dunn (Eds.), *Children's sibling relationships* (pp. 192-240). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Buhrmester, D. (1996). Need fulfillment, interpersonal competence and the developmental contexts of early adolescent friendship. In W. Bukowski, A. Newcomb, & W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 158-185). New York, NY: Cambridge University Press.
- Buhrmester, D., & Furman, W. (1986). The changing functions of friends in childhood: A neo-sullivanian perspective. In V. J. Derlega & B. A. Winstead (Eds.), *Friendship and social interaction* (pp. 41-62). New York, NY: Springer.
- Buhrmester, D., & Furman, W. (1987). The development of companionship and intimacy. *Child Development*, *58*, 1101-1113.
- Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, *55*, 991-1008.
- Buist, K. L., Dekovic, M., Meeus, W., & Van Aken, M. A. G. (2002). Developmental patterns in adolescent attachment to mother, father, and sibling. *Journal of Youth and Adolescence*, *31*, 167-176.
- Buist, K. L., Dekovic, M., Meeus, W., & Van Aken, M. A. G. (2004a). The reciprocal relationship between early adolescent attachment and internalizing and externalizing problem behavior. *Journal of Adolescence*, *27*, 251-266.
- Buist, K. L., Dekovic, M., Meeus, W. H., & Van Aken, M. A. G. (2004b). Attachment in adolescence: A Social Relations Model analysis. *Journal of Adolescent Research*, *19*, 826-850.

- Bukowski, W. M., Sippola, L. K., & Hoza, B. (1999). Same and other: Interdependency between participation in same- and other-sex friendships. *Journal of Youth and Adolescence*, 28, 439-459.
- Bulanda, R. E., & Majumdar, D. (2009). Perceived parent-child relations and adolescent self-esteem. *Journal of Child and Family Studies*, 18, 203-212.
- Burge, D., Hammen, C., Davila, J., Daley, S. E., Paley, B., Herzberg, D., & Lindberg, N. (1997). Attachment cognitions and college and work functioning two years later in late adolescent women. *Journal of Youth and Adolescence*, 26, 283-301.
- Bush, D. M., & Simmons, R. (1987). Gender and coping with the entry into early adolescence. In R. C. Barnett, L. Biener, & G. K. Baruch (Eds.), *Gender and stress* (pp. 185-218). New York, NY: The Free Press.
- Byrne, D. G., Davenport, S. C., & Mazanov, J. (2007). Profiles of adolescent stress: The development of the adolescent stress questionnaire (ASQ). *Journal of Adolescence*, 30, 393-416.
- Cairns, R. B., Leung, M., Buchanan, L., & Cairns, B. D. (1995). Friendships and social networks in childhood and adolescence: Fluidity, reliability, and interrelations. *Child Development*, 66, 1330-1345.
- Caldwell, J. C., Caldwell, P., Caldwell, B. K., & Pieris, I. (1998). The construction of adolescence in a changing world: Implication for sexuality, reproduction, and marriage. *Studies in Family Planning*, 29, 137-153.
- Camarena, P. M., Sarigiani, P. A., & Petersen, A. C. (1990). Gender-specific pathways to intimacy in early adolescence. *Journal of Youth and Adolescence*, 19, 19-32.
- Campa, M. I., Hazan, C., & Wolfe, J. E. (2009). The form and function of attachment behavior in the daily lives of young adults. *Social Development*, 18, 288-304.

- Carlivati, J., & Collins, W. A. (2007). Adolescent attachment representations and development in a risk sample. *New Directions for Child and Adolescent Development, 117*, 91-106.
- Carlson, E. A. (1998). A prospective longitudinal study of attachment disorganization/Disorientation. *Child Development, 69*, 1107-1128.
- Carnelley, K. B., & Brennan, K. A. (2002). Building bridges. *Attachment and Human Development, 4*, 189-192.
- Carnelley, K. B., Pietromonaco, P. R., & Jaffe, K. (1994). Depression, working models of others, and relationship functioning. *Journal of Personality and Social Psychology, 66*, 127-140.
- Carver, K., Joyner, K., Udry, J. R. (2003). National estimates of adolescent romantic relationships. In P. Florsheim (Ed.), *Adolescent romantic relationships and sexual behavior: Theory, research, and practical implications* (pp. 291-239). New York: Cambridge University Press.
- Casey, B. J., Jones, R. M., & Somerville, L. H. (2001). Braking and accelerating of the adolescent brain. *Journal of Research on Adolescence, 21*, 21-33.
- Caspi, A., Bern, D. J., & Elder, G. H. (1989). Continuities and consequences of interactional styles across the life course. *Journal of Personality, 57*, 375-406.
- Cassidy, J. (2001). Truth, lies, and intimacy: An attachment perspective. *Attachment and Human Development, 3*, 121-155.
- Cassidy, J. (2008). The nature of the child's ties. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp. 3-22). New York, NY: The Guilford Press.
- Chan, A., & Poulin, F. (2007). Monthly changes in the composition of friendship networks in early adolescence. *Merrill-Palmer Quarterly, 53*, 578-602.

- Chango, J. M., McElhaney, K. B., & Allen, J. P. (2009). Attachment organization and patterns of conflict resolution in friendships predicting adolescents' depressive symptoms over time. *Attachment and Human Development, 11*, 331-346.
- Cicchetti, D., & Toth, S. L. (1998). The development of depression in children and adolescents. *American Psychologist, 53*, 221-241.
- Cillessen, A. H. N. (2007). New perspectives on social networks in the study of peer relations. *New Directions for Child and Adolescent Development, 118*, 91-100.
- Claes, M. E. (1992). Friendship and personal adjustment during adolescence. *Journal of Adolescence, 15*, 39-55.
- Claes, M. (2003). *L'univers social des adolescents*. Montreal: Les Presses de l'Universite de Montreal.
- Claes, M., Lacourse, E., Ercolani, A-P, Pierro, A., Leone, L., Presaghi, F. (2005). Parenting, peer orientation, drug use, and antisocial behavior in late adolescence: A cross-national study. *Journal of Youth and Adolescence, 34*, 401-411.
- Clark, C., Haines, M. M., Head, J., Klineberg, E., Arephin, M., Viner, R. et al. (2006). Psychological symptoms and physical health and health behaviours in adolescents: A prospective 2-year study in East London. *Addiction, 102*, 126-135.
- Clark-Lempers, D. S., Lempers, J. D., & Ho, C. (1991). Early, middle, and late adolescents' perceptions of their relationships with significant others. *Journal of Adolescent Research, 6*, 296-315.
- Cohen, J. W. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Colarossi, L. G. (2001). Adolescent gender differences in social support: Structure, function and provider type. *Social Work Research, 25*, 233-241.
- Colarossi, L. G., & Eccles, J. S. (2003). Differential effects of support providers on adolescents' mental health. *Social Work Research, 27*, 19-30.

- Cole, D. A., Maxwell, S. E., Martin, J. M., Peeke, L. G., Seroczynski, A. D., Tram, J. M. et al. (2001). The development of multiple domains of child and adolescent self-concept: A cohort sequential longitudinal design. *Child Development, 72*, 1723-1746. (2001).
- Colin, V. (1987). *Infant's preferences between parents before and after moderate stress activates behavior*. Paper presented at the meeting of the Society for Research in Child Development, Baltimore.
- Collins, L. M. (1996). Is reliability obsolete? A commentary on "Are simple gain scores obsolete?". *Applied Psychological Measurement, 20*, 289-292.
- Collins, N. L. (1996). Working models of attachment: implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology, 71*, 810-832.
- Collins, N. L., Guichard, A. C., Ford, M. B., & Feeney, B. C. (2004). Working models of attachment: New developments and emerging themes. In S. W. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 196-239). New York, NY: The Guilford Press.
- Collin, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*, 644-663.
- Collins, N. L., & Read, S. J. (1994). Cognitive representations of attachment: The structure and function of working models. In K. Bartholomew & D. Perlman (Eds.), *Attachment processes in adulthood* (pp. 53-90). London, UK: Jessica Kingsley Publishers.
- Collins, W. A. (1990). Parent-child relationships in the transition to adolescence: Continuity and change in interaction, affect, and cognition. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Advances in adolescent development: Vol. 2. From*

childhood to adolescence: A transitional period? (pp. 85-106). Newbury Park, CA: Sage.

Collins, W.A. (1995). Relationships and development: Family adaptation to individual change. In S. Shulman (Ed.), *Close relationships and socioemotional development* (pp. 128-154). New York, NY: Ablex.

Collins, W. A. (1997). Relationships and development during adolescence: Interpersonal adaptation to individual change. *Personal Relationships, 4*, 1-14.

Collins, W. A. (2003). More than myth: The developmental significance of romantic relationships during adolescence. *Journal of Research on Adolescence, 13*, 1-24.

Collins, W. A., Haydon, K. C., & Hesemeyer, P. (2007). Relating relationships: Development, expansion, and interrelations in relationship networks. *International Journal of Behavioral Development, 31*, 581-584.

Collins, W. A., Hennighausen, K. C., Schmit, D. T., & Sroufe, L. A. (1997). Developmental precursors of romantic relationships: A longitudinal analysis. *New Directions for Child Development, 78*, 69-84.

Collins, W. A., & Laursen, B. (2000). Adolescent relationships: The art of fuge. In C. Hendrick & S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 59-70). Thousand Oaks, CA: Sage.

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 331-361). Hoboken, NJ: John Wiley & Sons.

Collins, W. A., Laursen, B., Mortensen, N., Luebker, C., & Ferreira, M. (1997). Conflict processes and transitions in parent and peer relationships: Implications for autonomy and regulation. *Journal of Adolescent Research, 12*, 178-198.

- Collins, W. A., Maccoby, E., Steinberg, L., Hetherington, E. M., & Bornstein, M. (2000). Contemporary research on parenting: the case for nature and nurture. *American Psychologist, 55*, 218-232.
- Collins, W. A., & Madsen, S. D. (2006). Personal relationships in adolescence and early adulthood. In A. L. Vangelisti & D. Perlman (Eds.), *The Cambridge handbook of personal relationships* (pp. 191-209). New York, NY: Cambridge University Press.
- Collins, W. A., & Repinski, D. J. (1994). Relationships during adolescence: Continuity and change in interpersonal perspective. In R. Montemayor, G. R. Adams, & T. P. Gullota (Eds.), *Personal relationships during adolescence* (pp. 7-36). Thousand Oaks, CA: Sage.
- Collins, W. A., & Sroufe, L. A. (1999). Capacity for intimate relationships: A developmental construction. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 125-147). New York, NY: Cambridge University Press.
- Collins, W. A., & Steinberg, L. (2006). Adolescent development in interpersonal context. In N. Eisenberg, W. Damon, & R. Lerner (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (pp. 1003-1067). Hoboken, NJ: John Wiley & Sons.
- Collins, W. A., & Van Dulman, M. (2006). The course of true love(s): Origins and pathways in the development of romantic relationships. In A. C. Crouter & A. Booth (Eds.), *Romance and sex in the emerging adulthood: Risks and opportunities. The Penn State University family issues symposia series* (pp. 63-86). Mahwah, NJ: Lawrence Erlbaum Associates.
- Collins, W. A., Welsh, D. P., & Furman, W. (2009). Adolescent romantic relationships. *Annual Review of Psychology, 60*, 631-652.

- Collishaw, S., Maughan, B., Natarajan, L., & Pickles, A. (2010). Trends in adolescent emotional problems in England: A comparison of two national cohorts twenty years apart. *Journal of Child Psychology and Psychiatry, 51*, 885-894.
- Compain, L., Gowen, L. K., & Hayward, C. (2004). Peripubertal girls' romantic and platonic involvement with boys: Associations with body image and depressive symptoms. *Journal of Research on Adolescence, 14*, 23-47.
- Compas, B. E. (2004). Processes of risk and resilience during adolescence: Linking contexts and individuals. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 263-296). Hoboken, NJ: John Wiley & Sons.
- Compas, B. E., Davis, G. E., & Forsythe, C. J. (1985). Characteristics of life events. *American Journal of Community Psychology, 13*, 677-691.
- Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Review of Psychology, 46*, 265-293.
- Conger, R. D., & Ge, X. (1999). Conflict and cohesion in parent-adolescent relations: Changes in emotional expression from early to midadolescence. In M. J. Cox & J. Brooks-Gunn (Eds.), *Conflict and cohesion in families: Causes and consequences* (pp. 185-206). Mahwah, NJ: Lawrence Erlbaum Associates.
- Connolly, J., Craig, W., Goldberg, A., & Pepler, D. (1999). Conceptions of cross-sex friendships and romantic relationships in early adolescence. *Journal of Youth and Adolescence, 28*, 481-494.
- Connolly, J., Craig, W., Goldberg, A., & Pepler, D. (2004). Mixed-gender groups, dating, and romantic relationships in early adolescence. *Journal of Research on Adolescence, 14*, 185-207.

- Connolly, J., Furman, W., & Konarski, R. (2000). The role of peers in the emergence of heterosexual romantic relationships in adolescence. *Child Development, 71*, 1395-1408.
- Connolly, J. & Goldberg, A. (1999). Romantic relationships in adolescence: The role of friends and peers in their emergence. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 266-290). Cambridge, UK: Cambridge University Press.
- Connolly, J., & Johnson, A. M. (1996). Adolescents' romantic relationships and the structure and quality of their interpersonal relationships. *Personal Relationships, 3*, 185-195.
- Connolly, J. A., & Konarski, R. (1994). Peer self-concept in adolescence. Analysis of factor structure and associations with peer experience. *Journal of Research in Adolescence, 43*, 385-403.
- Connolly, S. D., Paikoff, R. L., & Buchanan, C. M. (1996). Puberty: The interplay of biological and psychosocial processes in adolescence. In G. R. Adams, R. Montemayor, & T. P. Gullota (Eds.), *Psychosocial development during adolescence* (pp. 259-299). Thousand Oaks, CA: Sage
- Cook, W. L. (2000). Understanding attachment security in family context. *Journal of Personality and Social Psychology, 78*, 285-294.
- Cook, C., Heath, F., & Thompson, R. L. (2000). A meta-analysis of response rates in web- or internet-based surveys. *Educational and Psychological Measurements, 60*, 821-836.
- Cooper, M. L., Albino, A. W., Orcutt, H. K., & Williams, N. (2004). Attachment styles and intrapersonal adjustment: A longitudinal study from adolescence into young adulthood. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory,*

research, and clinical implications (pp. 438-466). New York, NY: The Guilford Press.

- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology, 74*, 1380-1397.
- Copeland, W., Shanahan, L., Costello, E., & Angold, A. (2009). Configurations of common childhood psychological risk factors. *Journal of Child Psychology and Psychiatry, 50*, 451-459.
- Cornwell, B. (2003). The dynamic properties of social support: Decay, growth, and staticity, and their effects on adolescent depression. *Social Forces, 81*, 953-978.
- Corsano, P., Majorano, M., & Champretavy, L. (2006). Psychological well-being in adolescence: The contribution of interpersonal relations and experience of being alone. *Adolescence, 41*, 341-353.
- Cosmides, L., & Tooby, J. (1987). From evolution to behavior: Evolutionary psychology as the missing link. In J. Dupre (Ed.), *The latest on the best: Essays on evolution and optimality* (pp. 277-306). Cambridge, MA: MIT Press.
- Costello, E. J., Copeland, W., & Angold, A. (2011). Trends in psychopathology across the adolescent years: What changes when children become adolescence, and when adolescents become adults? *Journal of Child Psychology and Psychiatry, 52*, 1015-1025.
- Costello, E. J., Egger, H. L., & Angold, A. (2005). 10-year research update review: The epidemiology of child and adolescent psychiatric disorders: I. Method and public health burden. *Journal of the American Academy Child and Adolescent Psychiatry, 44*, 972-986.
- Cotterell, J. L. (1992). The relation of attachments and supports to adolescent well-being and school adjustment. *Journal of Adolescent Research, 7*, 28-42.

- Coupe, T. (2008). Unpublished, doctoral dissertation, The Australian National University, Canberra, Australia.
- Courser, M. W., Shamblen, S. R., Lavrakas, P. J., Collins, D., & Ditterline, P. (2009). The impact of active consent procedures on nonresponse and nonresponse error in youth survey data: Evidence from a new experiment. *Evaluation Review, 33*, 370-395.
- Cozzarelli, C., Hoekstra, S. J., & Bylsma, W. H. (2000). General versus specific mental models of attachment: Are they associated with different outcomes? *Personality and Social Psychology Bulletin, 26*, 605-618.
- Cronbach, L., & Furby, L. (1970). How should we measure “change” – or should we? *Psychological Bulletin, 105*, 68-80.
- Crone, E. A. (2009). Executive functions in adolescence: Inferences from brain and behavior. *Developmental Science, 12*, 825-830.
- Crosnoe, R., & Elder, G. H. (2004). Family dynamics, supportive relationships, and educational resilience during adolescence. *Journal of Family Issues, 25*, 571-602.
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construal theory and gender. *Psychological Bulletin, 122*, 5-37.
- Crowell, J. A., Fraley, R. C., & Shaver, P.R. (1999). Measurement of individual differences in adolescent and adult attachment. In J. Cassidy & P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 434-465). New York, NY: The Guilford Press.
- Crowell, J. A., Fraley, R. C., & Shaver, P. R. (2008). Measurement of individual differences in adolescent and adult attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp. 599-636). New York, NY: The Guilford Press.

- Cummings, E. M., & Cicchetti, D. (1990). Toward a transactional model of relations between attachment and depression. In E. M. Cummings (Ed.), *Attachment in the preschool years*. Chicago, IL: University of Chicago Press.
- Cummings, J., Butler, B., & Kraut, R. (2002). The quality of online social relationships. *Communications of the ACM*, *45*, 103–108.
- Dahl, R. E. (2004). Adolescent brain development: A period of vulnerabilities and opportunities, keynote address. *Annals of the New York Academy of Sciences*, *1021*, 1-22.
- Damon, W. (2004). What is positive youth development? *Annals of the American Academy of Political and Social Sciences*, *591*, 13-24.
- Dashiff, C. (2001). Data collection with adolescents. *Journal of Advanced Nursing*, *33*, 343-349.
- Davis, I., Broome, M., & Cox, R. (2002). Maximizing retention in community-based trials. *Journal of Nursing Scholarship*, *34*, 47-53.
- Davis, K. E., & Todd, M. (1982). Friendship and love relationships. In K. E. Davis (Ed.), *Advances in descriptive psychology: Vol. 2*. (pp. 79-122). Greenwich, CT: JAI Press.
- Davies, P. T., & Windle, M. (2000). Middle adolescents' dating pathways and psychosocial adjustment. *Merrill-Palmer Quarterly*, *46*, 90-118.
- Davis, M. H., Morris, M. M., & Kraus, L. A. (1998). Relationship-specific and global perceptions of social support: Associations with wellbeing and attachment. *Journal of Personality and Social Psychology*, *74*, 468-481.
- Davila, J., Burge, D., & Hammen, C. (1997). Why does attachment style change? *Journal of Personality and Social Psychology*, *73*, 826-838.
- Davila, J., Ramsay, M., Stroud, C. B., & Steinberg, S. (2005). Attachment as vulnerability to the development of psychopathology. In B. L. Hankin & J. R. Z.

- Abela (Eds.), *Development of psychopathology: A vulnerability-stress perspective* (pp. 215-242). Thousand Oaks, CA: Sage.
- Davila, J., Steinberg, S. J., Kachadourian, L., Cobb, R., & Fincham, F. (2004). Romantic involvement and depressive symptoms in early and late adolescence: The role of a preoccupied relational style. *Personal Relationships, 11*, 161-178.
- Degirmencioglu, S. M., Urberg, K. A., Tolson, J. M., & Richard, P. (1998). Adolescent friendship networks: Continuity and change over the school year. *Merrill-Palmer Quarterly, 44*, 313-337.
- De Goede, I. H. A., Branje, S. J. T., Delsing, M. J. M. H., & Meeus, W. H. J. (2009). Linkages over time between adolescents' relationships with parents and friends. *Journal of Youth and Adolescence, 38*, 1304-1315.
- De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009a). Developmental changes and gender differences in adolescents' perceptions of friendships. *Journal of Adolescence, 32*, 1105-1123.
- De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009b). Developmental changes in adolescents' perceptions of relationships with their parents. *Journal of Youth and Adolescence, 38*, 75-88.
- Dehne, K. L., & Riedner, G. (2001). Adolescence – a dynamic concept, *Reproductive Health Matters, 9*, 11-15.
- Dekovic, M. (1999). Risk and protective factors in the development of problem behavior during adolescence. *Journal of Youth and Adolescence, 28*, 667-685.
- Dekovic, M., Engels, R. C. M. E., Shirai, T., de Kort, G., & Anker, A. L. (2002). The role of peer relations in adolescent development in two cultures: The Netherlands and Japan. *Journal of Cross-cultural Psychology, 33*, 577-595.
- Dekovic, M., Janssens, J. M. A. M., & Van As, N. M. C. (2003). Family predictors of antisocial behavior in adolescence. *Family Process, 42*, 223-235.

- Dekovic, M., & Meeus, W. (1997). Peer relations in adolescence: Effects of parenting and adolescents' self-concept. *Journal of Adolescence, 20*, 163-176.
- Diamond, L. M. (2000). Sexual identity, attractions, and behavior among young sexual-minority woman over a two-year period. *Developmental Psychology, 36*, 241-250.
- Diamond, L. M., & Dube, E. M. (2002). Friendship and attachment among heterosexual and sexual-minority youths: Does the gender of your friend matter? *Journal of Youth and Adolescence, 31*, 155-166.
- Diamond, L. M., & Hicks, A. M. (2004). Psychobiological perspectives on attachment: Implications for health over the lifespan. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 240-263). New York, NY: The Guilford Press.
- Diamond, L. M., & Savin-Williams, R. C. (2003). The intimate relationships of sexual-minority youths. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 393-412). Malden, MA: Blackwell Publishing Ltd.
- Diamond, L. M., Savin-Williams, R. C., & Dube, E. M. (1999). Sex, dating, passionate friendships, and romance: intimate peer relationships among lesbian, gay, and bisexual adolescents. In W. Furman (Ed.), *The development of romantic relationships in adolescence* (pp. 175-210). New York, NY: Cambridge University Press.
- Dishion, T. J., Nelson, S. E., & Bullock, B. M. (2004). Premature adolescent autonomy: Parent disengagement and deviant peer process in the amplification of problem behavior. *Journal of Adolescence, 27*, 515-530.
- Dishion, T. J., Spracklen, K. M., Andrews, D. W., & Patterson, G. R. (1996). Deviancy training in male adolescent friendships. *Behavior Therapy, 27*, 373-390.
- Doherty, N. A., & Feeney, J. A. (2004). The composition of attachment networks throughout the adult years. *Personal Relationships, 11*, 469-488.

- Doherty, W. J., Kouneski, E. F., & Erickson, M. F. (1998). Responsible fathering: An overview and conceptual framework. *Journal of Marriage and the Family*, *60*, 277-292.
- Doll, B., & Hess, R. (2004). Interventions for children who drop out of school. In L. A. Rapp-Paglicci, C. N. Dulmus, & J. S. Wodarski (Eds.), *Handbook of preventive interventions for children and adolescents* (pp. 359-380). Hoboken, NJ: John Wiley & Sons.
- Domagala-Zysk, E. (2006). The significance of adolescents' relationships with significant others and school failure. *School Psychology International*, *27*, 232-247.
- Doornwaard, S. M., Branje, S., Meeus, W. H. J., & ter Bogt, T. F. M. (2012). Development of adolescents' peer group identification in relation to changes in problem behaviors. *Developmental Psychology*, *48*, 1366-1380.
- Dorn, L. D., & Biro, F. M. (2011). Puberty and its measurement: A decade in review. *Journal of Research on Adolescence*, *21*, 180-195.
- Douvan, E., & Adelson, J. (1966). *The adolescent experience*. New York, NY: John Wiley & Sons.
- Dowdy, B. B., & Kliever, W. (1998). Dating, parent-adolescent conflict, and behavioral autonomy. *Journal of Youth and Adolescence*, *27*, 473-492.
- Downey, G., Bonica, C., & Rincon, C. (1999). Rejection sensitivity and adolescent romantic relationships. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 148-174). Cambridge, UK: Cambridge University Press.
- Doyle, A. B., Brendgen, M., Markiewicz, D., & Kamkar, K. (2003). Family relationships as moderators of the association between romantic relationships and adjustment in early adolescence. *Journal of Early Adolescence*, *23*, 316-340.

- Doyle, A. B., Lawford, H., & Markiewicz, D. (2009). Attachment style With mother, father, best friend, and romantic partner during adolescence. *Journal of Research on Adolescence, 19*, 690-714.
- Doyle, A. B., & Markiewicz, D. (2005). Parenting, marital conflict and adjustment from early- to mid-adolescence: Mediated by adolescent attachment style? *Journal of Youth and Adolescence, 34*, 97-110.
- Dubas, J. S., & Petersen, A. C. (1996). Geographical distance from parents and adjustment during adolescence and young adulthood. *New Directions for Child Development, 71*, 3-19.
- Dunphy, D. (1963). The social structure of urban adolescent peer groups. *Sociometry, 26*, 230-246.
- Dwyer, K. M. (2005). The meaning and measurement of attachment in middle and late childhood. *Human Development, 48*, 155-182.
- Dwyer, K. M., Fredstrom, B. K., Rubin, K. H., Booth-LaForce, C., Rose-Krasnor, L., & Burgess, K. B. (2010). Attachment, social information processing, and friendship quality of early adolescent girls and boys. *Journal of Social and Personal Relationships, 27*, 91-116.
- Easterbrooks, M. A., & Goldberg, W. A. (1984). Toddler development in the family: Impact of father involvement and parenting characteristics. *Child Development, 55*, 740-752.
- Eccles, J. S., Early, D., Fraser, K., Belansky, E., & McCarthy, K. (1997). The relation of connection, regulation, and support for autonomy to adolescents' functioning. *Journal of Adolescent Research, 12*, 263-286.
- Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C. et al. (1993). Development during adolescence: The impact of stage-environment fit on

- young adolescents' experiences in schools and in families. *American Psychologist*, 48, 90-101.
- Eder, D. (1993). "Go get ya a French!": Romantic and sexual teasing among adolescent girls. In D. Tannen (Ed.), *Gender and conversational interaction* (pp. 17-31). Oxford, NY: Oxford University Press.
- Edwards, O. W., Mumford, V. E., & Serra-Roldan, R. (2007). A positive youth development model for students considered at-risk. *School Psychology International*, 28, 29-45.
- Elliot, G., & Feldman, S. (1990). Capturing the adolescent experience. In S. Feldman & G. Elliot (Eds.), *Children's social networks and social supports* (pp. 119-150). New York, NY: John Wiley & Sons.
- Ennett, S. T., & Bauman, K. E. (1996). Adolescent social networks: School, demographic, and longitudinal considerations. *Journal of Adolescent Research*, 11, 194-215.
- Ennett, S. T., Bauman, K. E., & Koch, G. G. (1994). Variability in cigarette smoking within and between adolescent friendship cliques. *Addictive Behaviors*, 19, 295-305.
- Erdley, C. A., Nangle, D. W., Newman, J. E., & Carpenter, E. M. (2001). Children's friendship experiences and psychological adjustment: Theory and research. *New Directions for Child and Adolescent Development*, 91, 5-24.
- Erikson, E. H. (1968). *Identity, youth, and crisis*. New York, NY: Norton.
- Eshbaugh, E. M. (2008). Perceptions of family relationship factors and depressive symptoms in adolescents: What roles do parents and gender play? *Journal of Child and Family Studies*, 17, 127-139.
- Fass, M. E., & Tubman, J. G. (2002). The influence of parental and peer attachment on college students' academic achievement. *Psychology in the Schools*, 39, 561-573.

- Feeney, J. A. (1995). Adult attachment and emotion control. *Personal Relationships, 2*, 143-159.
- Feeney, J. A. (1999). Adult romantic attachment and couple relationships. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 355-377). New York, NY: The Guilford Press.
- Feeney, J. A. (2002). Attachment-related dynamics: What can we learn from self-reports of avoidance and anxiety? *Attachment and Human Development, 4*, 193-200.
- Feeney, J. A. (2004). Transfer of attachment from parents to romantic partners: Effects of individual and relationship variables. *Journal of Family Studies, 10*, 220-238.
- Feeney, J. A., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80*, 972 - 994.
- Feeney, J. A., & Noller, P. (1996). *Adult attachment*. Thousand Oaks, CA: Sage.
- Feeney, J. A., Noller, P., & Hanrahan, M. (1994). Assessing adult attachment: Development in the conceptualization of security and insecurity. In M. B. Sperling & W. H. Berman (Eds.), *Attachment in adults: theory, assessment, and treatment* (pp. 128-152). New York, NY: The Guilford Press.
- Feiring, C. (1996). Concepts of romance in 15-year-old adolescents. *Journal of Research on Adolescence, 6*, 181-200.
- Feiring, C. (1999). Other-sex friendship networks and the development of romantic relationships in adolescence. *Journal of Youth and Adolescence, 28*, 495-512.
- Feiring, C., & Lewis, M. (1991). The development of social networks from early to middle childhood: Gender differences and the relation to school competence. *Sex Roles, 25*, 237-253.
- Feixa, C. (2011). Past and present of adolescence in society: The 'teen brain' debate in perspective. *Neuroscience and Biobehavioral Reviews, 35*, 1634-1643.

- Feldman, S. S., & Elliott, G. R. (Eds.). (1990). *At the threshold: The developing adolescent*. Cambridge, MA: Harvard University Press.
- Field, T., Diego, M., & Sanders, C. (2002). Adolescents' parent and peer relationships. *Adolescence*, 37, 121-130.
- Finkenauer, C., Engels, R. C. M. E., Meeus, W., & Oosterwegel, A. (2002). Self and identity in early adolescence: the pains and gains of knowing who and what you are. In T. M. Brinhaupt & R. P. Lipka (Eds.), *Understanding early adolescent self and identity: Applications and interventions* (pp. 25-56). Albany, NY: State University of New York Press.
- Fischer, J. L. (1981). Transitions in relationship style from adolescence to young adulthood. *Journal of Youth and Adolescence*, 10, 11-23.
- Fischer, C. T., & Alapack, R. J. (1987). A phenomenological approach to adolescence. In V. van Hasselt & J. M. Herson (Eds.), *Handbook of adolescent psychology* (pp. 91-99). New York, NY: Pergamon.
- Fletcher, G. J. O. (2002). *The new science of intimate relationships*. Malden, MA: Blackwell Publishing Ltd.
- Fletcher, A. C., Daring, N. E., Steinberg, L., & Dornbusch, S. M. (1995). The company they keep: Relation of adolescents' adjustment and behavior to their friends' perceptions of authoritative parenting in the social network. *Developmental Psychology*, 2, 300-310.
- Flick, S. N. (1988). Managing attrition in clinical research. *Clinical Psychology Review*, 8, 499-515.
- Flouri, E., & Buchanan, A. (2003). The role of father involvement and mother involvement in adolescents' psychological wellbeing. *British Journal of Social Work*, 33, 399-406.

- Fonagy, P., Steele, H., & Steele, M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. *Child Development, 62*, 891-905.
- Forbes, E. E., & Dahl, R. E. (2010). Pubertal development and behavior: Hormonal activation of social and motivational tendencies. *Brain and Cognition, 72*, 66-72.
- Fraley, R. C. (2002a). Introduction to the special issue: The psychodynamics of adult attachments – Bridging the gap between disparate research traditions. *Attachment and Human Development, 4*, 131-132.
- Fraley, R. C. (2002b). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review, 6*, 123-151.
- Fraley, R. C., & Brumbaugh, C. C. (2004). A dynamical systems approach to conceptualizing and studying stability and change in attachment security. In S. W. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 86-132). New York, NY: The Guilford Press.
- Fraley, R. C., & Davis, K. E. (1997). Attachment formation and transfer in young adults' close friendships and romantic relationships. *Personal Relationships, 4*, 131-144.
- Fraley, R. C., Garner, J. P., & Shaver, P. R. (2000). Adult attachment and the defensive regulation of attention and memory: Examining the role of preemptive and postemptive defensive processes. *Journal of Personality and Social Psychology, 79*, 816-826.
- Fraley, R. C., Niels, C., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 38*, 350-365.

- Fraley, R. C., & Shaver, P. R. (1997). Adult attachment and the suppression of unwanted thoughts. *Journal of Personality and Social Psychology, 73*, 1080-1091.
- Fraley, R. C., & Shaver, P. R. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198-1212.
- Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology, 4*, 132-154.
- Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77-114). New York: The Guilford Press.
- Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350-365.
- Freeman, H., & Almond, T. A. (2010). Mapping young adults' use of fathers for attachment support: Implications on romantic relationship experiences. *Early Child Development and Care, 180*, 227-248.
- Freeman, H., & Brown, B. B. (2001). Primary attachment to parents and peers during adolescence: Differences by attachment style. *Journal of Youth and Adolescence, 30*, 653-674.
- Freeman, H., Newland, L. A., & Coyl, D. D. (2010). New directions in father attachment. *Early Child Development and Care, 180*, 1-8.
- Friedlmeier, W., & Granqvist, P. (2006). Attachment transfer among Swedish and German adolescents: A prospective longitudinal study. *Personal Relationships, 13*, 261-279.

- Fuligni, A. J., & Eccles, J. S. (1993). Perceived parent-child relationships and early adolescents' orientation towards peers. *Developmental Psychology, 29*, 622-632.
- Fuligni, A. J., Eccles, J. S., Barber, B. L., & Clements, P. (2001). Early adolescent peer orientation and adjustment during high school. *Developmental Psychology, 37*, 28-36.
- Furman, W. (1999). Friends and lovers: the role of peer relationships in adolescent romantic relationships. In W. A. Collins & B. Laursen (Eds.), *Relationships as developmental contexts: Vol. 30. The Minnesota symposia on child psychology* (pp. 133-154). Mahwah, NJ: Lawrence Erlbaum Associates.
- Furman, W. (2001). Working models of friendships. *Journal of Social and Personal Relationships, 18*, 583-602.
- Furman, W. (2002). The emerging field of adolescent romantic relationships. *Current Directions In Psychological Science, 11*, 177-180.
- Furman, W., & Bierman, K. L. (1984). Children's conceptions of friendships: A multimethod study of developmental changes. *Developmental Psychology, 20*, 925-931.
- Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63*, 103-115.
- Furman, W., Low, S., & Ho, M. J. (2009). Romantic experience and psychosocial adjustment in middle adolescence. *Journal of Clinical Child and Adolescent Psychology, 38*, 75-90.
- Furman, W., & Shaffer, L. (2003). The role of romantic relationships in adolescent development. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 3-22). Mahwah, NJ: Lawrence Erlbaum Associates.

- Furman, W., & Shomaker, L. B. (2008). Patterns of interaction in adolescent romantic relationships: Distinct features and links to other close relationships. *Journal of Adolescence, 31*, 771-788.
- Furman, W., & Simon, V. A. (1998). Advice from youth: Some lessons from the study of adolescent relationships. *Journal of Social and Personal Relationships, 15*, 723-739.
- Furman, W., & Simon, V. A. (2004). Concordance in attachment states of mind and styles with respect to fathers and mothers. *Developmental Psychology, 40*, 1239-1247.
- Furman, W., Simon, V. A., Shaffer, L., Bouchey, H. A. (2002). Adolescents' working models and styles for relationships with parents, friends, and romantic partners. *Child Development, 73*, 241-255.
- Furman, W., & Wehner, E. A. (1994). Romantic views: Toward a theory of adolescent romantic relationships. In R. Montemayor, G. R. Adams, & G. P. Gullota (Eds.), *Advances in adolescent development, Vol. 6. Relationships during adolescence* (pp. 168-175). Thousand Oaks, CA: Sage.
- Furman, W., & Wehner, E. A. (1997). Adolescent romantic relationships: A developmental perspective. *New Directions for Child Development, 78*, 21-36.
- Furman, W., & Winkles, J. K. (2010). Predicting romantic involvement, relationship cognitions, and relationship qualities from physical appearance, perceived norms, and relational styles regarding friends and parents. *Journal of Adolescence, 33*, 827-836.
- Furrer, C. J. (2010). Capturing the friendship context with a collective property: Friendship group engagement vs. disaffection. *Journal of Adolescence, 33*, 853-867.

- Gallagher, R. V., Welsh, D. P., Rostosky, S. S., Kawaguchi, M. C. (2004). Interaction and relationship quality in late adolescent romantic couples, *Journal of Social and Personal Relationships*, 21, 203-216.
- Garfenski, N., & Okma, S. (1996). Addition-risk and aggressive/criminal behavior in adolescence: Influence of family, school, and peers. *Journal of Adolescence*, 19, 503-512.
- Gavin, L. A., & Furman, W. (1989). Age differences in adolescents' perceptions of their peer groups. *Developmental Psychology*, 25, 827-824.
- Gaylord-Harden, N. K., Taylor, J. J., Campbell, C. L., Kesselring, C. M., & Grant, K. E. (2009). Maternal attachment and depressive symptoms in urban adolescents: The influence of coping strategies and gender. *Journal of Clinical Child and Adolescent Psychology*, 38, 684-695.
- Ge, X., & Conger, R. D. (2000). Stressful life events and adolescent depressive symptoms: A six-year longitudinal study. In N. N. Singh, J. P. Leung, & A. N. Singh (Eds.), *International Perspectives on Child and Adolescent Mental Health: Vol. 1. Proceedings of the First International Conference* (pp. 92-108). Hong Kong: Elsevier Science Ltd.
- Ge, X., Brody, G. H., Conger, R. D., & Simons, R. L. (2006). Pubertal maturation and african american children's internalizing and externalizing symptoms. *Journal of Youth and Adolescence*, 35(4), 531-540.
- Ge, X., Conger, R. D., & Elder, Jr. G. H. (2001). Pubertal transition, stressful life events, and the emergence of gender differences in adolescent depressive symptoms. *Developmental Psychology*, 37, 404-417.
- Ge, X., Kim, I. J., Brody, G. H., Conger, R. D., Simons, R. L., Gibbons, F. X. et al. (2003). It's about timing and change: Pubertal transition effects on symptoms of

- major depression among African American youths. *Developmental Psychology*, 39, 430-439.
- George, C., Kaplan, N., & Main, M. (1984). *Adult Attachment Interview*. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- George, C., Kaplan, N., & Main, M. (1996). *Adult Attachment Interview* (3rd ed.). Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- Giligan, C. (1987). Adolescent development reconsidered. *New Directions for Child Development*, 37, 63-92.
- Giordano, P. C., Longmore, M. A., & Manning, W. D. (2006). Gender and the meanings of adolescent romantic relationships: A focus on boys. *American Sociological Review*, 71, 260-287.
- Glaser, D. (2000). Child abuse and neglect and the brain: A review. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41, 97-116.
- Gnaulati, E., & Heine, B. J. (2001). Separation-individuation in late adolescence: An investigation of gender and ethnic differences. *The Journal of Psychology*, 135, 59-70.
- Goh, Y. L. D. (2007). *Attachment transfer and the importance of romantic partners in predicting adolescent psychological health*. Unpublished master's thesis, The Australian National University, Canberra, Australia.
- Goh, Y. L. D., & Wilkinson, R. B. (2007). Attachment transfer and the importance of romantic partners in predicting adolescent psychological health. *Proceedings of The Combined 7th Conference of the Australian Psychological Society's Psychology of Relationships Interest Group and International Association for Relationship Research Mini-Conference* (pp. 50-55). Melbourne, Australia: The Australian Psychological Society.

- Goldberg, S., Grusec, J. E., & Jenkins, J. M. (1999). Confidence in protection: Arguments for a narrow definition of attachment. *Journal of Family Psychology, 13*, 475-483.
- Goldstein, S. E., Davis-Kean, P. E., & Eccles, J. S. (2005). Parents, peers, and problem behavior: A longitudinal investigation of the impact of relationship perceptions and characteristics on the development of adolescent problem behavior. *Developmental Psychology, 41*, 401-413.
- Gonzalez, M., Casas, F., & Coenders, G. (2007). A complexity approach to psychological well-being in adolescence: Major strengths and methodological issues. *Social Indicators Research, 80*, 267-295.
- Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*, 60-71.
- Gore, S., & Aseltine, R. H. Jr. (1995). Protective processes in adolescence: matching stressors with social resources. *American Journal of Community Psychology, 23*, 301-27.
- Gore, S., Aseltine, R. H., & Colten, M. E. (1993). Gender, social-relational involvement, and depression. *Journal of Research on Adolescence, 3*, 101-125.
- Gore, F. M., Bloem, P. J. N., Patton, G. C., Ferguson, J., Joseph, V., Coffey, C. et al. (2011). Global burden of disease in young people aged 10-24 years: A systematic analysis. *Lancet, 377*, 2093-2102.
- Graber, J. A., Brooks-Gunn, J., & Petersen, A. C. (1996). *Transitions through adolescence: Interpersonal domains and context*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Graber, J. A., & Petersen, A. C. (1991). Cognitive changes in adolescence: Biological perspectives. In K. R. Gibson & A. C. Petersen (Eds.), *Brain maturation and*

- cognitive development: Comparative and cross-cultural perspectives* (pp. 253-279).
 NY: Aldine de Gruyter.
- Grabill, C. M., & Kerns, K. A. (2000). Attachment style and intimacy in friendship. *Personal Relationships, 7*, 363-378.
- Graham, J. A., Cohen, R., Zbikowski, S. M., & Secrist, M. E. (1998). A longitudinal investigation of race and sex as factors in children's classroom friendship choices. *Child Study Journal, 28*, 245-266.
- Gravetter, F. J., & Wallnau, L. B. (2000). *Statistics for the behavioral sciences* (5th ed.). Belmont, CA: Wadsworth.
- Gray, M. R., & Steinberg, L. (1999). Adolescent romance and the parent-child relationship: A contextual perspective. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The development of romantic relationships in adolescence* (pp. 235-265). Cambridge: University Press.
- Green, S. B. (1991). How many subjects does it take to do a regression analysis? *Multivariate Behavioral Research, 26*, 499-510.
- Greenberg, M. T., Siegel, J. M., & Leitch, C. J. (1983). The nature and importance of attachment relationships to parents and peers during adolescence. *Journal of Youth and Adolescence, 12*, 373-386.
- Greenberger, E., & McLaughlin, C. S. (1998). Attachment, coping, and explanatory style in late adolescence. *Journal of Youth and Adolescence, 27*, 121-138.
- Griffin, D. & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology, 67*, 430-445.
- Griffin, K. W., Botvin, G. J., Scheier, L. M., Epstein, J. A., & Doyle, M. M. (2002). Personal competence skills, distress, and well-being as determinants of substance use in a predominantly minority urban adolescent sample. *Prevention Science, 3*, 23-33.

- Groer, M. W., Thomas, S. P., & Shoffner, D. (1992). Adolescent stress and coping: A longitudinal study. *Research in Nursing & Health, 15*, 209-217.
- Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Applied Developmental Psychology, 25*, 633-649.
- Grossmann, K., Grossmann, K. E., Kindler, H., & Zimmermann, P. (2008). A wider view of attachment and exploration: The influence of mothers and fathers on the development of psychological security from infancy to young adulthood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 880-905). New York, NY: The Guilford Press.
- Grotevant, H. D., & Cooper, C. R. (1986). Individuation in family relationships: A perspective on individual differences in the development of identity and role-taking skills in adolescence. *Human Development, 29*, 82-100.
- Guttman, L. (1950). The basis for scalogram analysis. In S. A. Stouffer, L. Guttman, E. A. Suchman, P. F. Lazarfeld, S. A. Star, & J. A. Clausen (Eds.) *Measurement and prediction: Studies in social psychology in World War II: Vol. 4.* (pp. 60-90). Princeton, NJ: Princeton University Press.
- Ha, T., Overbeek, G., De Greef, M., Scholte, R. H. J., Engels, R. C. M. E. (2010). The importance of relationships with parents and best friends for adolescents' romantic relationship quality: Differences between indigenous and ethnic Dutch adolescents. *International Journal of Behavioral Development, 34*, 121-127.
- Haigler, V. F., Day, H. D., & Marshall, D. D. (1995). Parental attachment and gender-role identity. *Sex Roles, 33*, 203-220.
- Hair, E. C., Moore, K. A., Garrett, S. B., Lig, T., & Cleveland, K. (2008). The continued importance of quality parent-adolescent relationships during late adolescence. *Journal of Research on Adolescence, 18*, 187-200.

- Hall, G. S. (1904). *Adolescence: Its psychology and its relation to physiology, anthropology, sociology, sex, crime, religion, and education (Vols. I & II)*. Englewood Cliffs, NJ: Prentice-Hall.
- Hall, J. A. (2011). Sex differences in friendship expectations: A meta-analysis. *Journal of Social and Personal Relationships, 28*, 723-747.
- Hall-Lande, J. A., Eisenberg, M. E., Christenson, S. L., & Neumark-Sztainer, D. (2007). Social isolation, psychological health, and protective factors in adolescence. *Adolescence, 42*, 265-286.
- Hamilton, C. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development, 71*, 690-694.
- Hammen, C. L., Burge, D., Daley, S. E., Davila, J., Paley, B., & Rudolph, K. D. (1995). Interpersonal attachment cognitions and prediction of symptomatic responses to interpersonal stress. *Journal of Abnormal Psychology, 104*, 436-443.
- Hankin, B. L., Kassel, J. D., & Abela, J. R. Z. (2005). Adult attachment dimensions and specificity of emotional distress symptoms: Prospective investigations of cognitive risk and interpersonal stress generation as mediating mechanisms. *Personality and Social Psychology Bulletin, 31*, 136-151.
- Hardy, C. L., Bukowski, W. M., & Sippola, L. K. (2002). Stability and change in peer relationships during the transition to middle-level school. *Journal of Early Adolescence, 22*, 117-142.
- Harris, K. M., & Morgan, S. P. (1991). Fathers, sons, and daughters: Differential paternal involvement in parenting. *Journal of Marriage and the Family, 53*, 531-544.
- Harter, S. (1990). Self and identity development. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 352-387). Cambridge, MA: Harvard University Press.

- Harter, S. (1998). The development of self-representations. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 553-617). Hoboken, NJ: John Wiley & Sons.
- Hartos, J. L., & Power, T. G. (1997). Mothers' awareness of their early adolescents' stressors: Relation between awareness and adolescent adjustment. *Journal of Early Adolescence, 17*, 371-389.
- Hartup, W. W. (1992). Friendships and their developmental significance. In H. McGruk (Ed.), *Childhood social development: Contemporary perspectives* (pp. 175-205). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development, 67*, 1-13.
- Hartup, W. W. (2001). Friendship: Development in childhood and adolescence. In N. J. Smelser & P. B. Baltes (Chief Eds.), *International Encyclopedia of the Social and Behavioral Sciences* (pp. 5809-5812). Oxford, UK: Elsevier Ltd.
- Hartup, W. W., & Abecassis, M. (2002). Friends and enemies. In P. K. Smith & C. H. Hart (Eds.), *Blackwell handbook of childhood social development* (pp. 286-306). Malden: Blackwell Publishing Ltd.
- Hartup, W. W., & Laursen, B. (1991). Relationships as developmental contexts. In R. Cohen & A. W. Siegel (Eds.), *Context and development* (pp. 253-279). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin, 121*, 355-370.
- Harvard School of Public Health. (1996). *The global burden of disease: A comprehensive assessment of mortality and disability, injuries, and risk factors in 1990 and projected to 2020*. Geneva: World Bank.

- Hawton, K., & James, A. (2005). Suicide and deliberate self-harm in young people. *British Medical Journal*, *330*, 891-894.
- Hay, I., & Ashman, A. F. (2003). The development of adolescents' emotional stability and general self-concept: The interplay of parents, peers, and gender. *International Journal of Disability, Development and Education*, *50*, 77-91.
- Haynie, D. L., & Osgood, D. W. (2005). Reconsidering peers and delinquency: How do peers matter? *Social Forces*, *84*, 1109-1130.
- Hazan, C., Campa, M., & Gur-Yaish, N. (2006). Attachment across the lifespan. In P. Noller & J. Feeney (Eds.), *Close relationships: Functions, forms and processes* (pp. 189-209). Hove, England: Psychology Press/Taylor & Francis (UK).
- Hazan, C., Gur-Yaish, N., & Campa, M. (2004). What does it mean to be attached? In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 55-85). New York, NY: Guilford Publications.
- Hazan, C., Hutt, M. J., Sturgeon, J., & Bricker, T. (1991, April). *The process of relinquishing parents as attachment figures*. Paper presented at the biennial meetings of the Society for Research in Child Development, Seattle, WA.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, *52*, 511-524.
- Hazan, C., & Shaver, P. R. (1994). Deeper into attachment theory. *Psychological Inquiry*, *5*, 68-79.
- Hazan, C., & Zeifman, D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 151-178). London, UK: Jessica Kingsley.
- Hazan, C., & Zeifman, D. (1999). Pair bonds as attachments: Evaluating the evidence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: theory, research, and clinical applications* (pp. 336-354), New York, NY: The Guilford Press.

- Hazan, C., & Zeifman, D. (2008). Pair bonds as attachments: Evaluating the evidence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 436-455). New York, NY: The Guilford Press.
- Hazen, N. L., McFarland, L., Jacobvitz, D., & Boyd-Soisson, E. (2010). Fathers' frightening behaviours and sensitivity with infants: Relations with fathers' attachment representations, father-infant attachment, and children's later outcomes. *Early Child Development and Care, 180*, 51-69.
- Heaven, P. C. L. (2001). *The social psychology of adolescence*. New York, NY: Palgrave Macmillan.
- Heffernan, M. E., Fraley, R. C., Vicary, A. M., & Brumbaugh, C. C. (2012). Attachment features and functions in adult romantic relationships. *Journal of Social and Personal Relationships, 29*, 671-693.
- Heiss, G. E., Berman, W. H., & Sperling, M. B. (1996). Five scales in search of a construct: Exploring continued attachment to parents in college students. *Journal of Personality Assessment, 67*, 102-115.
- Helsen, M., Vollebergh, W., & Meeus, W. (2000). Social support from parents and friends and emotional problems in adolescence. *Journal of Youth and Adolescence, 29*, 319-335.
- Hendrick, S. S., & Hendrick, C. (1993). Lovers as friends. *Journal of Social and Personal Relationships, 10*, 459-466.
- Hesse, B. (1999). The Adult Attachment Interview: Historical and current perspectives. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: theory, research, and clinical applications* (pp. 395-433), New York, NY: The Guilford Press.
- Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.),

- Girls at puberty: Biological and psychological perspectives (pp. 201-228). New York, NY: Plenum.
- Hoare, C. (2013). Three missing dimensions in contemporary studies of identity: The unconscious, negative attributes, and society. *Journal of Theoretical and Philosophical Psychology, 33*, 51-67.
- Hogue, A., & Steinberg, L. (1995). Homophily of internalized distress in adolescent peer groups. *Developmental Psychology, 31*, 897-906.
- Hortacsu, N., & Aydin, D. (2007). Changes in network composition and need satisfaction received from different network sectors during the first semester in university. *Interpersona, 1*, 1-16.
- Howard, M. S., & Medway, F. J. (2004). Adolescents' attachment and coping with stress. *Psychology in the Schools, 41*, 391-402.
- Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 671-687). New York, NY: The Guilford Press.
- Humphreys, L. G. (1996). Linear dependence of gain scores on their components impose constraints on their use and interpretation: Comment on "Are simple gain scores obsolete?". *Applied Psychological Measurement, 20*, 293-294.
- Ito, M., Baumer, S., Bittanti, M., boyd, d., Cody, R., Herr-Stephenson, B., et al. (2009). *Hanging out, messing around, and geeking out: Kids living and learning with new media*. Cambridge, MA: The MIT Press.
- Jaccard, J., Blanton, H., & Dodge, T. (2005). Peer influences on risk behavior: An analysis of the effect of a close friend. *Developmental Psychology, 1*, 135-147.
- Jackson, Y., & Warren, J. S. (2000). Appraisal, social support, and life events: Predicting outcome behavior in school-age children. *Child Development, 71*, 1441-1457.

- Jacobvitz, D., Curran, M., & Moller, N. (2002). Measurement of adult attachment: The place of self-report and interview methodologies. *Attachment and Human Development, 4*, 207-215.
- Jelicic, H., Phelps, E., & Lerner, R. M. (2010). Why missing data matter in the longitudinal study of adolescent development: Using the 4-H Study to understand the uses of different missing data methods. *Journal of Youth and Adolescence, 39*, 816-835.
- Jenkins, S. R., Goodness, K., & Buhrmester, D. (2002). Gender differences in early adolescents' relationship qualities, self-efficacy and depressive symptoms. *Journal of Early Adolescence, 22*, 277-309.
- Johnson, H. D. (2004). Gender, grade, and relationship differences in emotional closeness within adolescent friendships. *Adolescence, 39*, 243-255.
- Johnson, M. P., & Leslie, L. (1982). Couple involvement and network structure: A test of the dyadic withdrawal process. *Social Psychology Quarterly, 45*, 34-43.
- Joyner, K., & Udry, J. R. (2000). You don't bring anything but down: Adolescent romance and depression. *Journal of Health and Social Behavior, 41*, 369-391.
- Kachadourian, L. K., Fincham, F., & Davila, J. (2004). The tendency to forgive in dating and married couples: The role of attachment and relationship satisfaction. *Personal Relationships, 11*, 373-393.
- Kadushin, C. (2011). *Understanding social networks: Theories, concepts, and findings*. New York, NY: Oxford University Press.
- Kaslow, N., Adamson, L. B., & Collins, M. (2000). A developmental psychopathology perspective on the cognitive components of child and adolescent depression. In A. J. Sameroff, M. Lewis, & S. M. Miller (Eds.), *Handbook of developmental psychopathology* (2nd ed., pp. 491-510). Dordrecht, the Netherlands: Kluwer Academic.

- Kazdin, A. (1997). Practitioner review: Psychosocial treatments for conduct disorder in children. *Journal of Child Psychology and Psychiatry*, *38*, 161-178.
- Keating, D. P. (1990). Adolescent thinking. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: the developing adolescent* (pp. 54-89). Cambridge, MA: Harvard University Press.
- Keating, D. P. (2004). Cognitive and brain development. In R. M. Lerner & L. Steniberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 45-84). Hoboken, NJ: John Wiley & Sons.
- Keijsers, L., Frijns, T., Branje, S. J. T., & Meeus, W. (2009). Developmental links of adolescent disclosure, parental solicitation, and control with delinquency: Moderation by parental support. *Developmental Psychology*, *45*, 1314-1327.
- Kenny, D. A. (1975). A quasi-experimental approach to assessing treatment effects in the nonequivalent control group design. *Psychological Bulletin*, *82*, 345-362.
- Kenny, D. A. (1979). *Correlation and causality*. New York, NY: John Wiley & Sons.
- Kenny, M. E. (1987). The extent and function of parental attachment among first-year college students. *Journal of Youth and Adolescence*, *16*, 17-29.
- Kenny, M. E. (1994). Quality and correlates of parental attachment among late adolescents. *Journal of Counseling and Development*, *72*, 399-403.
- Kenny, R., Dooley, B., & Fitzgerald, A. (2013). Interpersonal relationships and emotional distress in adolescence. *Journal of Adolescence*, *36*, 351-360.
- Kenny, M. E., & Donaldson, G. A. (1991). Contributions of parental attachment and family structure to the social and psychological functioning of first-year college student. *Journal of Counseling Psychology*, *38*, 479-486.
- Kenny, M. E., & Donaldson, G. A. (1992). The relationship of parental attachment and psychological separation to the adjustment of first-year college women. *Journal of College Student Development*, *33*, 431-438.

- Kenny, M. E., & Gallagher, L. A. (2002). Instrumental and social/relationship correlates of perceived maternal and paternal attachment in adolescence. *Journal of Adolescence, 25*, 203-219.
- Kenny, M. E., Lomax, R., Brabeck, M., & Fife, J. (1998). Longitudinal pathways linking adolescent reports of maternal and paternal attachments to psychological well-being. *Journal of Early Adolescence, 18*, 221-243.
- Kerns, K. A., Contreras, J. M., & Neal-Barnett, A. M. (2000). *Family and peers: Linking two social worlds*. London, UK: Praeger.
- Kerns, K. A., Klepac, L., & Cole, A. (1996). Peer relationships and preadolescents' perceptions of security in the child-mother relationship. *Developmental Psychology, 32*, 457-466.
- Kerns, K. A., Tomic, P. L., & Kim, P. (2006). Normative trends in children's perceptions of availability and utilization of attachment figures in middle childhood. *Social Development, 15*, 1-22.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-at-onset distribution of DSM-IV disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry, 62*, 593-602.
- Kessler, R. C., & McLeod, J. D. (1984). Sex differences in vulnerability to undesirable life events. *American Sociological Review, 49*, 620-631.
- Kim, K. J., Conger, R. D., & Lorenz, F. O. (2001). Parent-adolescent reciprocity in negative affect and its relation to early adult social development. *Developmental Psychology, 37*, 775-790.
- Kinney, D. A. (1993). From nerds to normals: The recovery of identity among adolescents from middle school to high school. *Sociology of Education, 66*, 21-40.

- Kinney, D. A. (1999). From “headbangers” to “hippies”: Delineating adolescents’ active attempts to form an alternative peer culture. *New Directions for Child and Adolescent Development, 84*, 21-35.
- Kirkpatrick, L. A., & Davis, K. E. (1994). Attachment style, gender, and relationship stability: A longitudinal analysis. *Journal of Personality and Social Psychology, 66*, 502-512.
- Kiuru, N., Burk, W. J., Laursen, B., Salmela-Aro, K., & Nurmi, J. (2012). Pressure to drink but not to smoke: Disentangling selection and socialization in adolescent peer networks and peer groups. *Journal of Adolescence, 33*, 801-812.
- Klohnen, E. C., Weller, J. A., Luo, S., & Choe, M. (2005). Organization and predictive power of general and relationship-specific attachment models: One for all, and all for one? *Personality and Social Psychology Bulletin, 31*, 1665-1682.
- Kobak, R. (2002). Building bridges between social, developmental and clinical psychology. *Attachment and Human Development, 4*, 216-222.
- Kobak, R. (2009). Defining and measuring of attachment bonds: Comment on Kurdek (2009). *Journal of Family Psychology, 23*, 447-449.
- Kobak, R., & Madsen, S. (2008). Disruptions in attachment bonds: Implications for theory, research, and clinical intervention. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp. 23-47). New York, NY: The Guilford Press.
- Kobak, R., Rosenthal, N. L., Zajac, K., & Madsen, S.D. (2007). Adolescent attachment hierarchies and the search for an adult pair-bond. *New Directions for Child and Adolescent Development, 117*, 57-72.
- Kobak, R. R., Sudler, N., & Gamble, W. (1991). Attachment and depressive symptoms during adolescence: A developmental pathway analysis. *Development and Psychopathology, 3*, 461-474.

- Kroger, J. (2003). Identity development during adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 205-226). Malden, MA: Blackwell Publishing Ltd.
- Kunce, L. J., & Shaver, P. R. (1994). An attachment-theoretical approach to caregiving in romantic relationships. *Advances in Personal Relationships* 5, 205-237.
- Kurdek, L. A. (2009). Issues in defining and assessing features of attachment figures: Reply to Kobak (2009). *Journal of Family Psychology*, 23, 450-451.
- Kuttler, A. F., & La Greca, A. M. (2004). Linkages among adolescent girls' romantic relationships, best friendships, and peer networks. *Journal of Adolescence*, 27, 395-414.
- Kuttler, A. F., La Greca, A. M., & Prinstein, M. J. (1999). Friendship qualities and social-emotional functioning of adolescents with close, cross-sex friendships. *Journal of Research on Adolescence*, 9, 339-366.
- La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology*, 34, 49-61.
- La Greca, A. M., & Mackey, E. R. (2007). Adolescents' anxiety in dating situations: The potential role of friends and romantic partners. *Journal of Clinical Child and Adolescent Psychology*, 36, 522-533.
- La Greca, A. M., Prinstein, M. J., & Fetter, M. D. (2001). Adolescent peer crowd affiliation: Linkages with health-risk behaviors and close friendships. *Journal of Pediatric Psychology*, 26, 131-143.
- La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology*, 79, 367-384.

- Laible, D. J., Carlo, G., & Raffaelli, M. (2000). The differential relations of parent and peer attachment to adolescent adjustment. *Journal of Youth and Adolescence, 29*, 45-59.
- Laible, D. J., Carlo, G., & Roesch, S. C. (2004). Pathways to self-esteem in late adolescence : The role of parent and peer attachment, empathy, and social behaviours. *Journal of Adolescence, 27*, 703-716.
- Laitinen-Krispijn, S., Van der Ende, J., Hazebrock-Kampschreur, A. A. J. M., & Verhulst, F. C. (1999). Pubertal maturation and the development of behavioral and emotional problems in early adolescence. *Acta Psychiatrica Scandinavica, 99*, 16-25.
- Lamb, M. E. (1977). Father-infant and mother-infant interaction in the first year of life. *Child Development, 48*, 167-181.
- Lamb, M. E. (1997). Fathers and child development: An introductory overview and guide. In M. E. Lamb (Ed.), *The role of the father in child development* (3rd ed., pp. 1-18). New York, NY: John Wiley & Sons.
- Lamb, M. E. (2000). The history of research on father involvement: An overview. *Marriage and Family Review, 29*, 23-42.
- Lamb, M. E. (2002). Infant-father attachments and their impact on child development. In C. Tamis-LeMonda & N. Cabrera (Eds.), *Handbook of father-involvement* (pp. 93-117). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Larose, S., & Bernier, A. (2001). Social support processes: Mediators of attachment state of mind and adjustment in late adolescence. *Attachment and Human Development, 3*, 96-120.
- Larose, S., & Boivin, M. (1998). Attachment to parents, social support expectations, and socioemotional adjustment during the high school-college transition. *Journal of Research on Adolescence, 8*, 1-27.

- Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55*, 170-183.
- Larson, R. W., & Richards, M. H. (1991). Daily companionship in late childhood and early adolescence: changing developmental contexts. *Child Development, 62*, 284-300.
- Larson, R. W., Richards, M. H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents' daily interactions with their families from 10 to 18: Disengagement and transformation. *Developmental Psychology, 32*, 744-754.
- Larson, R., Wilson, S., Brown, B. B., Furstenberg, F. F., & Verma, S. (2002). Changes in adolescents' interpersonal experiences: Are they being prepared for adult relationships in the 21st century? *Journal of Research on Adolescence, 13*, 31-68.
- Laursen, B. (1996). Closeness and conflict in adolescent peer relationships: Interdependence with friends and romantic partners. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 186-210). New York, NY: Cambridge University Press.
- Laursen, B., & Bukowski, W. M. (1997). A developmental guide to the organization of close relationships. *International Journal of Behavioral Development, 21*, 747-770.
- Laursen, B., & Collins, W. A. (1994). Interpersonal conflict during adolescence. *Psychological Bulletin, 115*, 197-209.
- Laursen, B., & Collins, W. A. (2009). Parent-adolescent relationships and influences. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology, Vol. 2. Contextual influences on adolescent development* (3rd ed., pp. 3-42). Hoboken, NJ: John Wiley & Sons.
- Laursen, B., Hartup, W. W., & Koplas, A. L. (1996). Towards understanding peer conflict. *Merrill-Palmer Quarterly, 42*, 76-102.

- Laursen, B., Furman, W., Mooney, K. S. (2006). Predicting interpersonal competence and self-worth from adolescent relationships and relationship networks: Variable-centered and person-centered perspectives. *Merrill-Palmer Quarterly*, 52, 572-600.
- Laursen, B., & Mooney, K. S. (2008). Relationship network quality: Adolescent attachment and perceptions of relationships with parents and friends. *American Journal of Orthopsychiatry*, 78, 47-53.
- Laursen, B., & Williams, V. A. (1997). Perceptions of interdependence and closeness in family and peer relationships among adolescents with and without romantic partners. *New Directions for Child Development*, 78, 3-20.
- Le, B., Loving, T. J., Lewandowski, G. W. Jr., Feinberg, E. G., Johnson, K. C., Fiorentino, R. et al. (2008). Missing a romantic partner: A prototype analysis. *Personal Relationships*, 15, 511-532.
- Leeper, C. (1994). Exploring the consequences of gender segregation on social relationships. In C. Leaper (Ed.), *New Directions for Child Development, Vol. 65, Childhood gender segregation: Causes and consequences* (pp. 67-86). San Francisco, CA: Jossey-Bass.
- Leeper, C., & Anderson, K. J. (1997). Gender development and heterosexual romantic relationships during adolescence. *New Directions for Child Development*, 78, 85-103.
- LeCroy, C. W., & Krysik, J. (2008). Predictors of academic achievement and school attachment among Hispanic adolescents. *Children and Schools*, 30, 197-209.
- Lee, A., & Hankin, B. L. (2009). Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child and Adolescent Psychology*, 38, 219-231.

- Lempers, J. D., & Clark-Lempers, D. S. (1992). Young, middle, and late adolescents' comparisons of the functional importance of five significant relationships. *Journal of Youth and Adolescence, 21*, 53-96.
- Lempers, J. D., & Clark-Lempers, D. S. (1993). A functional comparison of same-sex and opposite sex friendships during adolescence. *Journal of Adolescent Research, 8*, 89-108.
- Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). *Social media & mobile Internet use among teens and young adults*. Washington, DC: Pew Internet & American Life Project.
- Lerner, R. M. (1995). *America's youth in crisis: challenges and options for programs and policies*. Thousand Oaks, CA: Sage.
- Lerner, R. M. (2002). *Concepts and theories of human development* (3rd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lerner, R. M., Fisher, C. B., & Weinberg, R. A. (2000). Toward a science for and of the people: Promoting civil society through the application of developmental science. *Child Development, 71*, 11-20.
- Lerner, R. M., & Galambos, N. L. (1998). Adolescent development: Challenges and opportunities for research, programs, and policies. *Annual Review of Psychology, 49*, 413-446.
- Lerner, R. M., & Spanier, G. B. (1980). A dynamic interactional view of child and family development. In R. M. Lerner & G. B. Spanier (Eds.), *Child influences on marital and family interaction: A life-span perspective* (pp. 1-20). New York, NY: Academic Press.
- Lerner, R. M., & Steinberg, L. (2004). The scientific study of adolescent development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 1-12). Hoboken, NJ: John Wiley & Sons.

- Lerner, R. M., Villarruel, F. A., & Castellino, D. R. (1999). Adolescence. In W. K. Silverman & T. H. Ollendick (Eds.), *Developmental issues in the clinical treatment of children* (pp. 125-136). Boston, MA: Allyn & Bacon.
- Levitt, M. J., Guacci-Franco, N., & Levitt, J. L. (1993). Convoys of social support in childhood and early adolescence: Structure and function. *Developmental Psychology, 29*, 811-818.
- Levy, M. B., & Davis, K. D. (1988). Love styles and attachment styles compared: their relations to each other and to various relationship characteristics. *Journal of Social and Personal Relationships, 5*, 439-471.
- Lewis, M., Feiring, C., & Rosenthal, S. (2000). Attachment over Time. *Child Development, 71*, 707-720.
- Li, Z. H., Connolly, J., Jiang, D., Pepler, D., & Craig, W. (2010). Adolescent romantic relationships in China and Canada: A cross-national comparison. *International Journal of Behavioral Development, 34*, 113-120.
- Lieberman, M., Doyle, A. B., & Markiewicz, D. (1999). Developmental patterns in security of attachment to mother and father in late childhood and early adolescence: Associations with peer relations. *Child Development, 70*, 202-213.
- Linden-Andersen, S., Markiewicz, D., & Dolye, A. B. (2009). Perceived similarity among adolescent friends: The role of reciprocity, friendship quality, and gender. *The Journal of Early Adolescence, 29*, 617-637.
- Llyod, B. T. (2002). A conceptual framework for examining adolescent identity, media influences, and social development. *Review of General Psychology, 6*, 73-91.
- Loeber, R., Drinkwater, M., Yin, Y., Anderson, S. J., Schmidt, L. C., & Crawford, A. (2000). Stability of family interaction from ages 6 to 18. *Journal of Abnormal Child Psychology, 28*, 353-369.

- Lopez, F. G., & Brennan, K. A. (2000). Dynamic processes underlying adult attachment organization: Toward an attachment theoretical perspective on the healthy and effective self. *Journal of Counseling Psychology, 47*, 283-301.
- Lopez, F. G., & Gover, M. R. (1993). Self-report measures of parent-adolescent attachment and separation-individuation: A selective review. *Journal of Counseling and Development, 71*, 560-569.
- Lord, F. M. (1956). The measurement of growth. *Educational and Psychological Measurement, 16*, 421-437.
- Luna, B., & Sweeney, J. A. (2001). Studies of brain and cognitive maturation through childhood and adolescence: A strategy for testing neurodevelopmental hypotheses. *Schizophrenia Bulletin, 27*, 443-455.
- Luyckx, K., Schwartz, S. J., Goossens, L., Soenens, B., & Beyers, W. (2008). Developmental typologies of identity formation and adjustment in female emerging adults: A latent class growth analysis approach. *Journal of Research on Adolescence, 18*, 595-619.
- Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: bridging self-determination theory and process-oriented identity research. *Journal of Counseling Psychology, 56*, 276-288.
- Lynne, S. D., Graber, J. A., Nichols, T. R., Brooks-Gunn, J., & Botvin, G. J. (2007). Links between pubertal timing, peer influences, and externalizing behaviors among urban students followed through middle school. *Journal of Adolescent Health, 40*, 181, e7-13.
- Ma, C. Q., & Huebner, E. S. (2008). Attachment relationships and adolescents' life satisfaction: Some relationships matter more to girls than boys. *Psychology in the Schools, 45*, 177-190.

- Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist, 45*, 513-520.
- Macek, P., & Jezek, S. (2007). Adolescents' assessments of parents and peers: Relationships to self-esteem and self-efficacy. *Cekoslovenska Psychologie, 51*, 26-36.
- Madsen, S. D., & Collins, W. A. (2008). Brief report: Expressive and collaborative relationship processes in observations of adolescents' interactions with parents and romantic partners. *Journal of Adolescence, 31*, 789-794.
- Mahoney, J. L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: the role of structure and social context. *Journal of Adolescence, 23*, 113-127.
- Main, M., & Cassidy, J. (1988). Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a 1-month period. *Developmental Psychology, 24*, 415-426.
- Main, M. & Goldwyn, R. (1985). *Adult attachment classification and scoring*. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- Main, M., & Goldwyn, R. (1998). *Adult attachment scoring and classification system*. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- Main, M., Hesse, E., & Kaplan, N. (2005). Predictability of attachment behavior and representational processes at 1, 6, and 19 years of age. In K. E. Grossmann, K. Grossmann, & E. Waters (Eds.), *Attachment from infancy to adulthood: The major longitudinal studies* (pp. 245-304). New York, NY: The Guilford Press.

- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*, 66-104.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 121-160). Chicago, IL: University of Chicago Press.
- Marceau, K., Neiderhiser, J. M., Lichtenstein, P., & Reiss, D. (2012). Genetic and environmental influences in the association between pubertal maturation and internalizing symptoms. *Journal of Youth and Adolescence, 41*, 1111-1126.
- Marcus, R. F., & Sanders-Reio, J. (2001). The influence of attachment on school completion. *School Psychology Quarterly, 16*, 427-444.
- Margolese, S. K., Markiewicz, D., & Doyle, A. B. (2005). Attachment to parents, best friend, and romantic partner: Predicting different pathways to depression in adolescence. *Journal of Youth and Adolescence, 34*, 637-650.
- Markiewicz, D., Doyle, A. B., & Brendgen, M. (2001). The quality of adolescents' friendships: Associations with mothers' interpersonal relationships, attachments to parents and friends, and prosocial behaviors. *Journal of Adolescence, 24*, 429-445.
- Markiewicz, D., Lawford, H., Doyle, A. B., Haggart, N. (2006). Developmental differences in adolescents' and young adults' use of mothers, fathers, best friends, and romantic partners to fulfill attachment needs. *Journal of Youth and Adolescence, 35*, 127-140.
- Marsh, P., Allen, J. P., Ho, M., Porter, M., & McFarland, F. C. (2006). The changing nature of adolescent friendships: Longitudinal links with early adolescent ego development. *Journal of Early Adolescence, 26*, 414-431.

- Marshall, W. A. (1978). The relationship of puberty to other maturity indicators and body composition in man. *Journal of Reproduction and Fertility*, *52*, 437-443.
- Marshall, W. A., & Tanner, J. M. (1974). Puberty. In J. D. Douvis & J. Drobeing (Eds.), *Scientific foundations of pediatrics* (pp. 124-151). London, UK: Heinemann.
- Marvin, R. S., & Britner, P. A. (1999). Normative development: The ontogeny of attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 44-67). New York, NY: The Guilford Press.
- Marvin, R. S., & Britner, P. A. (2008). Normative development: The ontogeny of attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp. 269-294). New York, NY: The Guilford Press.
- Masten, A. S., & Coatsworth, J. D. (1995). Competence, resilience, and psychopathology. In C. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Risk, disorder, and adaptation* (pp. 715-752). New York, NY: John Wiley & Sons.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology*, *11*, 143-169.
- Maughan, B., Iervolino, A. C., & Collishaw, S. (2005). Time trends in child and adolescent mental disorders. *Current Opinions in Psychiatry*, *18*, 381-385.
- Maxwell, S. E., & Howard, G. S. (1981). Change scores – necessarily anathema? *Educational and Psychological Measurement*, *41*, 747-756.
- Mayselless, O. (2004). Home leaving to military service: Attachment concerns, transfer of attachment functions from parents to peers, and adjustment. *Journal of Adolescent Research*, *19*, 533-558.

- Mayseless, O. (2005). Ontogeny of attachment in middle childhood: Conceptualization of normative changes. In K. A. Kerns & R. A. Richardson (Eds.), *Attachment in middle childhood* (pp. 1-23). New York, NY: The Guilford Press.
- Mayseless, O., & Scharf, M. (2007). Adolescents' attachment representations and their capacity for intimacy in close relationships. *Journal of Research on Adolescence, 17*, 23-50.
- Mayseless, O., Wiseman, H., & Hai, I. (1998). Adolescents' relationships with father, mother and same gender friend. *Journal of Adolescent Research, 13*, 101-123.
- McArdle, J. J., & Hamagami, F. (1992). Modeling incomplete longitudinal and cross sectional data using latent growth structural models. *Experimental Aging Research, 18*, 145-166.
- McCandless, B. R. (1970). *Adolescents*. Hillsdale, IL: Dryden Press.
- McCarthy, C. J., Moller, N. P., Fouladi, R. T. (2001). Continued attachment to parents: Its relationship to affect regulation and perceived stress among college students. *Measurement and Evaluation in Counseling and Development, 33*, 198-213.
- McCormick, C. B., & Kennedy, J. H. (1994). Parent-child attachment working models and self-esteem in adolescence. *Journal of Youth and Adolescence, 23*, 1-18.
- McElhaney, K. B., & Allen, J. P. (2009). Attachment and autonomy during adolescence. In R. M. Lerner & L. D. Steinberg (Eds.) *Handbook of adolescent psychology* (3rd ed., pp. 358-403). Hoboken, NJ: John Wiley & Sons.
- McElhaney, K. H., Allen, J. P., Stephenson, J. C., & Hare, A. L. (2009). Attachment and autonomy during adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology: Vol. 1. Individual bases of adolescent development* (3rd ed., pp., 358-403). Hoboken, NJ: John Wiley & Sons.

- McGue, M., Elkins, I., Walden, B., Iacono, W. G. (2005). Perceptions of the parent-adolescent relationship: A longitudinal investigation. *Developmental Psychology, 41*, 971-984.
- McLellan, A. T., Woody, G. E., Metzger, D., McKay, J., Durrell, J., Alterman, A. I. et al. (1997). Evaluating the effectiveness of addiction treatments: Reasonable expectations, appropriate comparisons. In J. A. Egertson, D. M. Fox, & A. I. Leshner (Eds.), *Treating drug abusers effectively*. Massachusetts, MA: Blackwell Publishers.
- McMahon, M., & Wilkinson, R. B. (2005). Attachment relationships and adolescent psychological health: The influence of romantic relationships. *Proceedings of the APS Psychology of Relationships Interest Group 5th Annual Conference* (pp. 101-106). Melbourne, Australia: The Australian Psychological Society.
- Mead, M. (1928). *Coming of age in Samoa: A psychological study of primitive youth for western civilization*. New York, NY: Morrow.
- Meadows, S. O., Brown, J. S., & Elder, G. H. Jr. (2006). Depressive symptoms, stress, and support: Gendered trajectories from adolescence to young adulthood. *Journal of Youth and Adolescence, 35*, 93-103.
- Meehl, P. E. (1995). Bootstraps taxometrics: Solving the classification problem in psychopathology. *American Psychologist, 50*, 266-275.
- Meeus, W., & Dekovic, M. (1995). Identity development, parental and peer support in adolescence: Results of a national Dutch survey. *Adolescence, 30*, 931-944.
- Meeus, W., Branje, S., & Overbeek, G. J. (2004). Parents and partners in crime: A six-year longitudinal study on changes in supportive relationships and delinquency in adolescence and young adulthood. *Journal of Child Psychology and Psychiatry, 45*, 1288-1298.
- Meeus, W., Oosterwegel, A., & Vollebergh, W. (2002). Parental and peer attachment and identity development in adolescence. *Journal of Adolescence, 25*, 93-106.

- Mesch, G. S., Talmund, I., & Quan-Haase, A. (2012). Instant messaging social networks: Individual, relational, and cultural characteristics. *Journal of Social and Personal Relationships, 29*, 736-759.
- Mickelson, K., Kessler, R., & Shaver, P. R. (1997). Adult attachment in a nationally representative sample. *Journal of Personality and Social Psychology, 73*, 1092-1106.
- Mikulincer, M., Birnbaum, G., Woddies, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploing the normative and intraindividual components of attachment theory. *Journal of Prsonality and Social Psychology, 87*, 509-523.
- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: Ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology, 87*, 940-956.
- Mikulincer, M., & Florian, V. (1995). Appraisal and coping with a real-life stressful situation: the contribution of attachment styles. *Personality and Social Psychology Bulletin, 21*, 408-416.
- Mikulincer, M., & Florian, V. (1998). The relationship between adult attachment styles and emotional and cognitive reactions to stressful events. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 143-165). New York, NY: The Guilford Press.
- Mikulincer, M., & Florian, V. (2001). Attachment style and affect regulation: Implications for coping with stress and mental health. In G. Fetcher & M. Clark (Eds.), *Blackwell handbook of social psychology: Interpersonal processes* (pp. 537-557). Oxford, UK: Blackwell Publications.
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental

- representations of attachment figures. *Journal of Personality and Social Psychology*, 83, 881-895.
- Mikulincer, M., & Nachson, O. (1991). Attachment styles and patterns of self-disclosure. *Journal of Personality and Social Psychology*, 61, 321-331.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology: Vol. 35*. (pp. 53-152). San Diego, CA: Elsevier Academic Press.
- Mikulincer M., & Shaver, P. R. (2005). Mental representations of attachment security: theoretical foundation for a positive social psychology. In M. W. Baldwin (Ed.), *Interpersonal cognition* (pp. 233-266). New York, NY: The Guilford Press.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: The Guilford Press.
- Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, 27, 77-102.
- Mikulincer, M., & Sheffi, E. (2000). Adult attachment style and cognitive reactions to positive affect: A test of mental categorization and creative problem-solving. *Motivation and Emotion*, 24, 149-174.
- Miller, T. B., & Kane, M. (2001). The precision of change scores under absolute and relative interpretations. *Applied Measurement in Education*, 14, 307-327.
- Miller, A. L., Notaro, P. C., & Zimmerman, M. A. (2002). Stability and change in internal working models of friendship: Associations with multiple domains of urban adolescent functioning. *Journal of Social and Personal Relationships*, 19, 233-259.
- Minuchin, P. (2002). Looking toward the horizon: Present and future in the study of family systems. In S. McHale & W. Grolnick (Eds.), *Retrospect and prospect in the*

- psychological study of families* (pp. 259-278). Mahwah, NJ: Lawrence Erlbaum Associates.
- Mitchell, M. L., & Jolley, J. M. (2001). *Research design explained* (4th ed.). Wadsworth, OH: Thomson Learning.
- Moffit, T. E. (1993). Adolescent-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review*, *100*, 674-701.
- Moller, N. P., Fouladi, R. T., McCarthy, C. J., & Hatch, K. D. (2003). Relationship of attachment and social support to college students' adjustment following a relationship breakup. *Journal of Counselling and Development*, *81*, 354-369.
- Montemayor, R., & Van Komen, R. (1985). The development of sex differences in friendship patterns and peer group structure during adolescence. *Journal of Early Adolescence*, *5*, 285-294.
- Montgomery, M. J., & Sorrell, G. T. (1998). Love and dating experience in early and middle adolescence: Grade and gender comparisons. *Journal of Adolescence*, *21*, 677-689.
- Moore, S., & Leung, C. (2002). Young people's romantic attachment styles and their associations with well-being. *Journal of Adolescence*, *25*, 243-255.
- Moretti, M. M., & Higgins, E. T. (1999). Own versus others in self-regulation: Developmental antecedents and functional consequences. *Review of General Psychology*, *3*, 188-223.
- Moretti, M. M., & Holland, R. (2003). The journey of adolescence: Transitions in self within. In S. M. Johnson & V. E. Whiffen (Eds.), *Attachment processes in couple and family therapy* (pp. 234-257). New York, NY: The Guilford Press.
- Morgan, E. M., & Korobov, N. (2012). Interpersonal identity formation in conversations with close friends about dating relationships. *Journal of Adolescence*, *35*, 1471-1483.

- Morgan, H. J., & Shaver, P. R. (1999). Attachment processes and commitment to romantic relationships. In J. M. Adams & W. H. Jones (Eds.), *Handbook of interpersonal commitment and relationship stability* (pp. 109-124). New York, NY: Plenum.
- Mounts, N. S., & Steinberg, L. (1995). An ecological analysis of peer influence on adolescent grade point average and drug use. *Developmental Psychology, 31*, 915-922.
- Mufson, L., Weissman, M. M., Moreau, D., & Garfinkel, R. (1999). Efficacy of interpersonal psychotherapy for depressed adolescents. *Archives of General Psychiatry, 56*, 573-579.
- Muris, P., Meesters, C., Van Melick, M., & Zwambag, L. (2001). Self-reported attachment styles, attachment quality, and symptoms of anxiety and depression in young adolescents. *Personality and Individual Differences, 30*, 809-818.
- Nada Raja, S., McGee, R., & Stanton, W. R. (1992). Perceived attachments to parents and peers and psychological well-being in Adolescence. *Journal of Youth and Adolescence, 21*, 471-485.
- Natsuaki, M. N., Klimes-Dougan, B., Ge, X., Shirtcliff, E. A., Hastings, P. D., & Zahn-Waxler, C. (2009). Early pubertal maturation and internalizing problems in adolescence: Sex differences in the role of cortisol reactivity to interpersonal stress. *Journal of Clinical Child and Adolescence Psychology, 38*, 513-524.
- Neeman, J. Hubbard, J., & Masten. A. (1995). The changing importance of romantic relationship involvement to competence from late childhood to late adolescence. *Development and Psychopathology, 7*, 727-750.
- Negriff, S., & Susman, E. J. (2011). Pubertal timing, depression, and externalizing problems: A framework, review, and examination of gender differences. *Journal of Research on Adolescence, 21*, 717-746.

- Nelis, S. M., & Rae, G. (2009). Brief report: Peer attachment in adolescents. *Journal of Adolescence, 32*, 443-447.
- Nelson, T. D., & Nelson, J. M. (2010). Evidence-based practice and the culture of adolescence. *Professional Psychology: Research and Practice, 41*, 305-311.
- Neugarten, B.L., & Neugarten, D.A. (Eds.). (1996). *The meanings of age: Selected papers of Bernice L. Neugarten*. Chicago, IL: University of Chicago Press.
- Newcomb, A. F., & Bagwell, C. L. (1998). The developmental significance of children's friendship relations. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence* (pp. 289-321). New York, NY: Cambridge University Press.
- Newman, P. R., & Newman, B. M. (1976). Early adolescence and its conflict: Group identity versus alienation. *Adolescence, 11*, 261-274.
- Nickerson, A. B., & Nagle, R. J. (2005). Parental and peer attachment in late childhood and early adolescence. *Journal of Early Adolescence, 25*, 223-249.
- Nieder, T., & Seiffge-Krenke, I. (2001). Coping with stress in different phases of romantic development. *Journal of Adolescence, 24*, 297-311.
- Noack, P., & Buhl, H. M. (2005). Relations with parents and friends during adolescence and early adulthood. *Marriage and Family Review, 36*, 31-51.
- Nomaguchi, K. M. (2008). Gender, family structure, and adolescents' primary confidants. *Journal of Marriage and Family, 70*, 1213-1227.
- Noom, M. J., Dekovic, M., & Meeus, W. H. J. (1999). Autonomy, attachment and psychosocial adjustment during adolescence: a double-edged sword? *Journal of Adolescence, 22*, 771-783.
- Nurmi, J. E. (2004). Socialisation and self-development: Channeling, selection, adjustment, and reflection. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., 85-124). Hoboken, New Jersey: John Wiley & Sons.

- Oberle, E., Schonert-Reichi, K. A., & Thomson, K. C. (2010). Understanding the link between social and emotional well-being and peer relations in early adolescence: Gender-specific predictors of peer acceptance. *Journal of Youth and Adolescence, 39*, 1330-1342.
- O'Brien, S. F., & Bierman, K. L. (1988). Conceptions and perceived influence of peer groups: Interviews with preadolescents and adolescents. *Child Development, 59*, 1360-1365.
- O'Connor, M., Hawkins, M. T., Letcher, P., Toumbourou, J. W., Smart, D., Vassallo, S. et al. (2010). Predictors of positive development in emerging adulthood. *Journal of Youth and Adolescence, 40*, 860-874.
- Ojanen, T., Gronroos, M., & Salmivalli, C. (2005). An interpersonal circumplex model of children's social goals: Links with peer-reported behavior and sociometric status. *Developmental Psychology, 41*, 699-710.
- Ollendick, T. H., Weist, M. D., Borden, M. G., & Greene, R. W. (1992). Sociometric status and academic, behavioral, and psychological adjustment: A five-year longitudinal study. *Journal of Counseling and Clinical Psychology, 60*, 80-87.
- Operario, D., Tschann, J., Flores, E., & Bridges, M. (2006). Brief Report: Associations of parental warmth, peer support, and gender with adolescent emotional distress. *Journal of Adolescence, 29*, 299-305.
- Oswald, D. L., Clark, E. M., & Kelly, C. M. (2004). Friendship maintenance: An analysis of individual and dyad behaviors. *Journal of Social and Clinical Psychology, 23*, 413-441.
- Overall, N. C., Fletcher, G. J., & Friesen, M. D. (2003). Mapping the intimate relationship mind: Comparisons between three models of attachment representations. *Personality and Social Psychology Bulletin, 29*, 1479-1493.

- Overbeek, G., Stattin, H., Vermulst, A., Ha, T., & Engels, R. C. M. E. (2007). Parent-child relationships, partner relationships, and emotional adjustment: A birth-to-maturity prospective study. *Developmental Psychopathology, 43*, 429-437.
- Overbeek, G., Vollebergh, W., Engels, R. C. M. E., & Meeus, W. (2003). Parental attachment and romantic relationships: Associations with emotional disturbance during late adolescence. *Journal of Counseling Psychology, 50*, 28-39.
- Padilla-Walker, L. M., & Bean, R. A. (2009). Negative and positive peer influence: relations to positive and negative behaviors for African American, European American, and Hispanic adolescents. *Journal of Adolescence, 32*, 323-337.
- Pagano, M. E., & Hirsch, B. J. (2007). Friendships and romantic relationships of black and white adolescents. *Journal of Child and Family Studies, 16*, 347-357.
- Paikoff, R. L., & Brooks-Gunn, J. (1991). Do parent-child relationships change during puberty? *Psychological Bulletin, 110*, 47-66.
- Palladino-Schultheiss, D., & Blustein, D. (1994). Contributions of family relationship factors to the identity formation process. *Journal of Counseling and Development, 73*, 159-166.
- Pallant, J. (2005). *SPSS survival manual: A step by step guide to data analysis using SPSS* (2nd ed.). Crows Nest, NSW: Allen & Unwin.
- Papini, D. R., Farmer, F. F., Clark, S. M., Micka, J. C., & Barnett, J. K. (1990). Early adolescent age and gender differences in patterns of emotional disclosure to parents and friends. *Adolescence, 15*, 959-1001.
- Papini, D. R., & Roggman, L. A. (1992). Adolescent perceived attachment to parents in relation to competence, depression, and anxiety: A longitudinal study. *Journal of Early Adolescence, 12*, 420-440.

- Papini, D. R., Roggman, L. A., & Anderson, J. (1991). Early-adolescent perceptions of attachment to mother and father: A test of the emotional-distancing and buffering hypotheses. *Journal of Early Adolescence, 11*, 258-275.
- Paquette, D. (2004). Theorizing the father-child relationship: Mechanisms and developmental outcomes. *Human Development, 47*, 193-219.
- Parke, R. D. (2002). Fathers and families. In M. Bornstein (Ed.), *Handbook of parenting, Vol. 3: Being and becoming a parent* (2nd ed., pp. 27-73). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Parke, R. D., & Buriel, R. (1998). Socialization within the family: Ethnic and ecological perspectives. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3: Social, emotional, and personality development* (5th ed., pp. 463-552). New York, NY: John Wiley & Sons.
- Parke, R. D., Morris, K., Schofield, T., Leidy, M., Miller, M., & Fly, M. (2006). Parent-child relationships: Contemporary perspectives. Attachment across the lifespan. In P. Noller & J. Feeney (Eds.) *Close relationships: Functions, forms and processes* (pp. 89-110). Hove, England: Psychology Press/Taylor & Francis (UK).
- Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 29*, 611-621.
- Parker, J. G., & Seal, J. (1996). Forming, losing, renewing, and replacing friendships: Applying temporal parameters to the assessment of children's friendship experiences. *Child Development, 67*, 2248-2268.
- Parkes, C. M., & Stevenson-Hinde, J. (Eds.). (1982). *The place of attachment in human behavior*. New York, NY: Basic Books.
- Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *Lancet, 369*, 1302-1313.

- Paterson, J. E., Field, J., & Pryor, J. (1994). Adolescents' perceptions of their attachment relationships with their mothers, fathers, and friends. *Journal of Youth and Adolescence, 23*, 579-600.
- Paterson, J., Pryor, J., & Field, J. (1995). Adolescent attachment to parents and friends in relation to aspects of self-esteem. *Journal of Youth and Adolescence, 24*, 365-376.
- Paul, E. L., Poole, A., & Jakubowyc, N. (1998). Intimacy development and romantic status: Implications for adjustment to the college transition. *Journal of College Student Development, 39*, 75-86.
- Patton, G. C., Coffey, C., Sawyer, S. M., Viner, R. M., Haller, D. M., Bose, K. et al. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *Lancet, 374*, 881-892.
- Paus, T., Keshavan, M., & Giedd, J. N. (2008). Why do many psychiatric disorders emerge during adolescence? *Nature Reviews, 9*, 947-957.
- Perosa, L. M., Perosa, S. L., & Tam, H. P. (1996). The contribution of family structure and differentiation to identity development in females. *Journal of Youth and Adolescence, 25*, 817-837.
- Petersen, A. C. (1988). Adolescent development. *Annual Review of Psychology, 39*, 583-607.
- Petersen, A. C., & Leffert, N. (1995). Developmental issues influencing guidelines for adolescent health research: A review. *Journal of Adolescent Health, 17*, 298-305.
- Phelp, S., & Jarvis, P. (1994). Coping in adolescence: empirical evidence for a theoretically based approach to assessing coping. *Journal of Youth and Adolescence, 23*, 359-371.
- Pierce, T., & Lydon, J. E. (2001). Global and specific relational models in the experience of social interactions. *Journal of Personality and Social Psychology, 80*, 613-631.

- Pietromonaco, P. R., & Feldman Barrett, L. (2000). The internal working models concept: What do we really know about the self in relation to others? *Review of General Psychology, 4*, 155-175.
- Pinquart, M., & Silbereisen, R. K. (2002). Changes in adolescents' and mothers' autonomy and connectedness in conflict discussions: An observation study. *Journal of Adolescence, 25*, 509-522.
- Pitman, R., & Scharfe, E. (2010). Testing the function of attachment hierarchies during emerging adolescence. *Personal Relationships, 17*, 201-216.
- Porges, S. W., Doussard-Roosevelt, J. A., & Maiti, A. K. (1994). Vagal tone and the physiological regulation of emotion. In N. Fox (Ed.), *The development of emotion regulation: Biological and behavioral considerations. Monographs of the Society for Research in Child Development, 59*, 167-186.
- Prinstein, M. J., Boergers, J., & Vernberg, E. M. (2001). Overt and relational aggression in adolescents: Social-psychological adjustment of aggressors and victims. *Journal of Clinical Child Psychology, 30*, 479-491.
- Prinz, R. J., Smith, E. P., Dumas, J. E., Laughlin, J. E., White, D. W., & Barron, R. (2001). Recruitment and retention of participants in prevention trials involving family-based interventions. *American Journal of Preventative Medicine, 20*, 31-37.
- Purdie, N., Carroll, A., & Roche, L. (2004). Parenting and adolescent self-regulation. *Journal of Adolescence, 27*, 663-676.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Rainie, L., & Wellman, B. (2012). *Networked: The new social operating system*. Cambridge, MA: The MIT Press.

- Ramirez, A., & Broneck, K. (2009). 'IM me': Instant messaging as relational maintenance and everyday communication. *Journal of Social and Personal Relationships, 26*, 291-314.
- Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: Overlap in adolescents' online and offline social networks. *Developmental Psychology, 48*, 356-368.
- Reis, H. T., Lin, Y. C., Bennett, M. E., & Nezlek, J. B. (1993). Change and consistency in social participation during early adulthood. *Developmental Psychology, 29*, 633-645.
- Reisman, J. M. (1990). Intimacy in same-sex friendships. *Sex Roles, 23*, 65-82.
- Rice, K. G. (1990). Attachment in adolescence: A narrative and meta-analytic review. *Journal of Youth and Adolescence, 19*, 511-538.
- Rice, K. G., Cunningham, T. J., & Young, M. B. (1997). Attachment to parents, social competence, and emotional well-being: A comparison of Black and White late adolescents. *Journal of Counseling Psychology, 44*, 89-101.
- Rice, K., & Mulkeen, P. (1995). Relationships with parents and peers: A longitudinal study of adolescent intimacy. *Journal of Adolescent Research, 10*, 338-357.
- Richards, M. H., Crowe, P. A., Larson, R., & Swarr, A. (1998). Developmental patterns and gender differences in the experience of peer companionship during adolescence. *Child Development, 69*, 154-163.
- Richards, M. H., Gitelson, I. B., Petersen, A. C., & Hurtig, A. L. (1991). Adolescent personality in girls and boys: The role of mothers and fathers. *Psychology of Women Quarterly, 15*, 65-81.
- Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*, 307-321.

- Richardson, R. A., Galambos, N. L., Schulenberg, J. E., & Petersen, A. C. (1984). Young adolescents' perceptions of the family environment. *Journal of Early Adolescence, 4*, 131-153.
- Ridenour, T. A., Greenberg, M. T., & Cook, E. T. (2006). Structure and validity of people in my life: A self-report measure of attachment in late childhood. *Journal of Youth and Adolescence, 35*, 1037-1053.
- Roberts, R. E., Andrews, J. A., Lewinsohn, P. M., & Hops, H. (1990). Assessment of depression in adolescents using the Center for Epidemiologic Studies Depression Scale. *Psychological Assessment, 2*, 122-128.
- Roberts, R. E., Attkisson, C. C., & Rosenblatt, A. (1998). Prevalence of psychopathology among children and adolescents. *American Journal of Psychiatry, 155*, 715-725.
- Roberts, J. E., Gotlib, I. H., & Kassel, J. D. (1996). Adult attachment security and symptoms of depression: The mediating roles of dysfunctional attitudes and low self-esteem. *Journal of Personality and Social Psychology, 70*, 310-320.
- Rogosa, D., & Willett, J. (1983). Demonstrating the reliability of the difference score in the measurement of change. *Journal of Educational Measurement, 20*, 335-343.
- Roisman, G. I., Holland, A., Fortuna, K., Fraley, R. C., Clausell, E., & Clarke, A. (2007). The Adult Attachment Interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology, 92*, 678-697.
- Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin, 132*, 98-131.
- Rosentstein, D. S., & Horowitz, H. A. (1996). Adolescent attachment and psychopathology. *Journal of Consulting and Clinical Psychology, 64*, 244-253.

- Rosenthal, N. L., & Kobak, R. (2010). Assessing adolescents' attachment hierarchies: Differences across developmental periods and associations with individual adaptation. *Journal of Research on Adolescence, 20*, 678-706.
- Ross, L. R., McKim, M. K., & DiTommaso, E. (2006). How do underlying "self" and "other" dimensions define adult attachment styles. *Canadian Journal of Behavioural Science, 38*, 294-310.
- Ross, L. R., & Spinner, B. (2001). General and specific attachment representations in adulthood: Is there a relationship? *Journal of Social and Personal Relationships, 18*, 747-766.
- Rossi, A., & Rossi, P. (1990). *Of human bonding: Parent-child relation across the life course*. New York: Aldine de Gruyter.
- Roth, M. A., & Parker, J. G. (2001). Affective and behavioral responses to friends who neglect their friends for dating partners: Influences of gender, jealousy and perspective. *Journal of Adolescence, 24*, 281-296.
- Rowe, A. C., & Carnelley, K. B. (2005). Preliminary support for the use of a hierarchical mapping technique to examine attachment networks. *Personal Relationships, 12*, 499-519.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (1998). Peer interactions, relationships, and groups. In W. Damon (Editor-in-Chief) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 619-700). New York, NY: John Wiley & Sons.
- Rubin, K. H., Bukowski, W., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 571-645). Hoboken, NJ: John Wiley & Sons.

- Rubin, K. H., Dwyer, K. M., Booth-LaForce, C., Kim, A. H., Burgess, K. B., & Rose-Krasnor, L. (2004). Attachment, friendship, and psychosocial functioning in early adolescence. *Journal of Early Adolescence, 24*, 326-356.
- Rumberger, R. W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research, 32*, 583-625.
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvement. *Journal of Personality and Social Psychology, 45*, 101-117.
- Russell, A., Pettit, G. S., & Mite, J. (1998). Horizontal qualities in parent-child relationships: Parallels with and possible consequences for children's peer relationships. *Developmental Review, 18*, 313-352.
- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. Mastern, D. Cicchetti, K. Neuchterlein, & S. Weintraub (Eds.), *Risks and protective factors in the development of psychopathology*. Cambridge, UK: Cambridge University Press.
- Rutter, M., & Rutter, M. (1993). *Developing minds*. London, UK: Penguin.
- Ryan, A. M. (2001). The peer group as a context for the development of young adolescent motivation and achievement. *Child Development, 72*, 1135-1150.
- Ryan, R. M., & Lynch, J. H. (1989). Emotional autonomy versus detachment: revisiting the vicissitudes of adolescence and young adulthood. *Child Development, 60*, 340-356.
- Sameroff, A. J., & Mackenzie, M. J. (2003). Research strategies for capturing transactional models of development: the limits of the possible. *Development and Psychopathology, 15*, 613-640.
- Santrock, J. W. (2003). *Adolescence* (9th ed.). Iowa: McGraw-Hill.

- Sarandrea, A. M. (2005). *The differential effects of maternal, paternal and peer attachment on psychological health during adolescence*. Unpublished master's thesis, The Australian National University, Canberra, Australia.
- Satcher, D. S. (2000). Executive summary: A report of the Surgeon General on mental health. *Public Health Reports*, *115*, 89-101.
- Savin-Willias, R. C. (1996). Dating and romantic relationships among gay, lesbian, and bisexual youths. In R. C. Savin-Williams & K. M. Cohen (Eds.), *The lives of lesbians, gays, and bisexuals: Children to adults* (pp. 166-180). Fort Worth, TX: Harcourt Brace.
- Savin-Williams, R. C., & Berndt, T. J. (1990). Friendships and peer relations during adolescence. In S. Feldman & G. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 277-307). Cambridge, MA: Harvard University Press.
- Sawyer, S. M., Afifi, R. A., Bearinger, L. H., Blakemore, S. J., Dick, B., Ezeh, A. C. et al. (2012). Adolescence: A foundation for future health. *Lancet*, *379*, 1630-1640.
- Schaffer, H. R., & Emerson, P. E. (1964). The development of social attachments in infancy. *Monographs of the Society of Research in Child Development*, *29*, 1-77.
- Scharf, M., & Mayseless, O. (2001). The capacity for romantic intimacy: Exploring the contribution of best friend and marital and parental relationships. *Journal of Adolescence*, *24*, 379-399.
- Scharf, M., & Mayseless, O. (2007). Putting eggs into more than one basket: A new look at developmental processes of attachment in adolescence. *New Directions for Child and Adolescent Development*, *117*, 1-22.
- Scharf, M., Mayseless, O., & Kivenson-Baron, I. (2004). Adolescents' attachment representations and developmental tasks in emerging adulthood. *Developmental Psychology*, *40*, 430-444.

- Scharfe, E. (2003). Stability and change of attachment representations from cradle to grave. In S. M. Johnson & V. E. Whiffen (Eds.), *Attachment processes in couple and family therapy* (pp. 64-84). New York, NY: The Guilford Press.
- Scharfe, E. (2007). Cause or consequence?: Exploring casual links between attachment and depression. *Journal of Social and Clinical Psychology, 26*, 1048-1064.
- Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships, 1*, 23-43.
- Scharfe, E., & Cole, V. (2006). Stability and change of attachment representations during emerging adulthood: An examination of mediators and moderators of change. *Personal Relationships, 13*, 363-374.
- Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-esteem Scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology, 89*, 623-642.
- Schneider, B. H., Atkinson, L., & Tardif, C. (2001). Child-parent attachment and children's peer relations: A quantitative review. *Developmental Psychology, 37*, 86-100.
- Schneider, B. H., & Younger, A. J. (1996). Adolescent-parent attachment and adolescents' relationships with their peers: A closer look. *Youth and Society, 28*, 95-108.
- Schoeppe, A., & Havighurst, R. J. (1952). A validation of development and adjustment hypotheses of adolescence. *Journal of Educational Psychology, 43*, 339-353.
- Scholte, R. H. J., Van Lieshout, C. F. M., & Van Aken, M. A. G. (2001). Perceived relational support in adolescence: Dimensions, configurations, and adolescent adjustment. *Journal of Research on Adolescence, 11*, 710-94.
- Schouten, A. P., Valkenburg, P. M., & Peter, J. (2007). Precursors and underlying processes of adolescents' online self-disclosure: developing and testing an

'Internet-attribute-perception' model. *Media Psychology*, 10, 292–315.

Schuengel, C., & Van IJzendoorn, M. H. (2001). Attachment in mental health institution: A critical review of assumptions, clinical implications, and research strategies. *Attachment and Human Development*, 3, 304-323.

Schwartz, S. J., Cote, J. E., & Arnett, J. J. (2005). Identity and agency in emerging adulthood: two developmental routes in the individualization process. *Youth and Society*, 37, 201-229.

Seiffge-Krenke, I. (1995). The unique contribution of close friends to coping behavior. In I. Seiffge-Krenke (Ed.), *Stress, coping, and relationships in adolescence* (pp. 170-189). Mahwah, NJ: Lawrence Erlbaum Associates.

Seiffge-Krenke, I. (1997). The capacity to balance intimacy and conflict: Differences in romantic relationships between healthy and diabetic adolescents. In S. Shulman & W. A. Collins (Eds.), *Romantic relationships in adolescence: Developmental perspectives* (pp. 53-68). San Francisco, CA: Jossey-Bass.

Seiffge-Krenke, I. (1999). Families with daughters, families with sons: Different challenges for family relationships and marital satisfaction? *Journal of Youth and Adolescence*, 28, 325-342.

Seiffge-Krenke, I. (2003). Testing theories of romantic development from adolescence to young adulthood: Evidence of a developmental sequence. *International Journal of Behavioral Development*, 27, 519-531.

Seiffge-Krenke, I. (2006). Coping with relationship stressors: The impact of different working models of attachment and links to adaptation. *Journal of Youth and Adolescence*, 35, 25-39.

Seiffge-Krenke, I., Overbeek, G., & Vermulst, A. (2010). Parent-child relationship trajectories during adolescence: longitudinal associations with romantic outcomes in emerging adulthood. *Journal of Adolescence*, 33, 159-171.

- Selman, R. L. (1980). *The growth of interpersonal understanding*. New York, NY: Academic Press.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.
- Shaffer, L. A., & Ognibene, T. C. (1998). Links between adolescent romantic relationships and friendship networks. Poster presented at the Society of Research on Adolescence, San Diego, California.
- Sharabany, R., Gershoni, R., & Hofman, J. E. (1981). Girlfriend, boyfriend: Age and sex differences in intimate friendship. *Developmental Psychology*, *17*, 800-808.
- Sharabany, R., Mayseless, O., Edri, G., & Lulav, D. (2001). Ecology, childhood experiences, and adult attachment styles of women in the kibbutz. *International Journal of Behavioral Development*, *25*, 214-225.
- Shaver, P. R., Belsky, J., & Brennan, K. A. (2000). The Adult Attachment Interview and self-reports of romantic attachment: Associations across domains and methods. *Personal Relationships*, *7*, 25-43.
- Shaver, P. R., Collins, N. L., & Clark, C. L. (1996). Attachment styles and internal working models of self and relationship partners. In G. J. O. Fletcher & J. Fitness (Eds.), *Knowledge structures in close relationships: A social psychological approach* (pp. 25-61). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Shaver, P. R., Hazan, C., & Bradshaw, D. (1988). Love as attachment. In R. J. Sternberg & M. L. Barnes (Eds.), *Measures of personality and social psychological attitudes* (pp. 68-99). New Haven, CT: Yale University Press.
- Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment and Human Development*, *4*, 133-161.

- Shearer, C., Crouter, A., & McHale, S. (2005). Parent's perceptions of changes in mother-child and father-child relationships during adolescence. *Journal of Adolescent Research, 20*, 662-684.
- Shek, D. T. (2005). Paternal and maternal influences on the psychological well-being, substance abuse, and delinquency of Chinese adolescents. *Journal of Clinical Psychology, 61*, 219-234.
- Shirtcliff, E. A., Dahl, R. E., & Pollak, S. D. (2009). Pubertal development: Correspondence between hormonal and physical development. *Child Development, 80*, 327-337.
- Shomaker, I. B., & Furman, W. (2009). Parent adolescent relationship qualities, internal working models, and attachment styles as predictors of adolescents' interactions with friends. *Journal of Social and Personal Relationships, 26*, 579-03.
- Short, M. B., & Rosenthal, S. L. (2008). Psychosocial development and puberty. *Annals of the New York Academy of Sciences, 1135*, 36-42.
- Short, J. L., & Russell-Mayhew, S. (2009). What counselors need to know about resiliency in adolescents. *International Journal of the Advancement of Counselling, 31*, 213-227.
- Shulman, S., & Collins, W. A. (1995). Close relationships over time: Coherence and development, change and adaptation. In S. Strauss (Series Ed.) & S. Shulman (Vol. Ed.), *Close relationships and socioemotional development: Vol 7. Human development* (pp. 219-228). Norwood, NJ: Ablex.
- Shulman, S., & Kipnis, O. (2001). Adolescent romantic relationships: A look from the future. *Journal of Adolescence, 24*, 337-351.
- Shulman, S., Laursen, B., Kalman, Z., & Karpovsky, S. (1997). Adolescent intimacy revisited. *Journal of Youth and Adolescence, 26*, 597-617.

- Shulman, S., & Scharf, M. (2000). Adolescent romantic behaviors and perceptions: Age- and gender-related differences, and links with family and peer relationships. *Journal of Research on Adolescence, 10*, 99-118.
- Shulman, S., & Seiffge-Krenke, I. (1997). *Adolescents and fathers: Developmental and clinical perspectives*. London, UK: Routledge.
- Shulman, S., & Seiffge-Krenke, I. (2001). Adolescent romance: between experience and relationships. *Journal of Adolescence, 24*, 417-428.
- Siebert, A. C., & Kerns, K. A. (2009). Attachment figures in middle childhood. *International Journal of Behavioral Development, 33*, 347-355.
- Sills, S. J., & Song, C. (2002). Innovations in survey research: An application of Web-based surveys. *Social Science Computer Review, 20*, 22-30.
- Simon, R., Eder, D., & Evans, C. (1992). The development of feeling norms underlying romantic love among adolescent females. *Social Psychology Quarterly, 55*, 29-46.
- Simpson, K., Janssen, I, Boyce, W. F., & Pickett, W. (2006). Risk taking and recurrent health symptoms in Canadian adolescents. *Preventive Medicine, 43*, 46-51.
- Simpson, J. A., Rholes, W. S., & Philips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology, 71*, 899-914.
- Sisk, C. L., & Zehr, J. L. (2005). Pubertal hormones organize the adolescent brain and behavior. *Frontiers in Neuroendocrinology, 26*, 163-174.
- Smetana, J. G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology, 57*, 255-284.
- Smetana, J. G., Metzger, A., & Campione-Barr, N. (2004). African American adolescents' relationships with parents: Developmental transitions and longitudinal patterns. *Child Development, 75*, 932-947.
- Smetana, J. G., Yau, J., & Hanson, S. (1991). Conflict resolution in families with adolescents. *Journal of Research on Adolescence, 1*, 189-206.

- Smith, A., & Schneider, B. H. (2000). The inter-ethnic friendships of adolescent students: A Canadian study. *International Journal of Intercultural Relations, 24*, 247-258.
- Sobolewski, J. M., & Amato, P. R. (2007). Parents' discord and divorce, parent-child relationships, and subjective wellbeing in early adulthood: Is feeling close to two parents always better than feeling close to one? *Social Forces, 85*, 1105-1124.
- Soucy, N., & Larose, S. (2000). Attachment and control in family and mentoring contexts as determinants of adolescent adjustment to college. *Journal of Family Psychology, 14*, 125-143.
- Sowell, E. R., Thompson, P. M., Leonard, C. M., Welcome, S. E., Kan, E., & Toga, A. W. (2004). Longitudinal mapping of cortical thickness and brain growth in normal children. *Journal of Neuroscience, 24*, 8223-8231.
- Spangler, G., & Zimmermann, P. (1999). Attachment representation and emotion regulation in adolescents: A psychobiological perspective on internal working models. *Attachment and Human Development, 1*, 270-290.
- Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience and Biobehavioral Reviews, 24*, 417-463.
- Sprecher, S. (1994). Two sides to the breakup of dating relationships. *Personal Relationships, 1*, 199-222.
- Srinath, S., Kandasamy, P., & Golhar, T. S. (2010). Epidemiology of child and adolescent mental health disorders in Asia. *Current Opinion in Psychiatry, 23*, 330-336.
- Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology, 9*, 251-268.
- Sroufe, L. A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment and Human Development, 7*, 349-367.

- Sroufe, L. A., Carlson, E. A., Levy, A. K., & Egeland, B. (1999). Implications for attachment theory for developmental psychopathology. *Development and Psychopathology, 11*, 1-13.
- Sroufe, L. A., Duggal, S., Weinfield, N., & Carlson, E. (2000). Relationships, development, and psychopathology. In A. J. Sameroff & M. Lewis (Eds.), *Handbook of developmental psychology* (2nd ed., pp. 75-91). New York, NY: Kluwer Academic/Plenum Publishers.
- Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). One social world: the integrated development of parent-child and peer relationships. In W. A. Collins & B. Laursen (Eds.), *Relationships as developmental contexts: Vol. 30. The Minnesota symposia on child psychology* (pp. 241-261). Mahwah, NJ: Lawrence Erlbaum Associates.
- Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. *Child Development, 48*, 1184-1199.
- Stanton-Salazar, R. D., Chavez, L. F., & Tai, R. H. (2001). The help-seeking orientations of Latino and non-Latino urban high school students: A critical-sociological investigation. *Social Psychology of Education, 5*, 49-82.
- Steinberg, L. (1990). Interdependency in the family: Autonomy, conflict, and harmony in the parent-adolescent relationship. In S. Feldman & G. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 255-276). Cambridge, MA: Harvard University Press.
- Steinberg, L. (1996). *Adolescence* (4th ed.). Iowa: McGraw-Hill.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences, 9*, 69-74.
- Steinberg, L. (2009). Adolescent development and juvenile justice. *Annual Review of Clinical Psychology, 5*, 459-485.

- Steinberg, L., & Lerner, R. M. (2004). The scientific study of adolescence: A brief history. *The Journal of Early Adolescence, 24*, 45-54.
- Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology, 52*, 83-110.
- Steinberg, L., & Silk, J. S. (2002). Parenting adolescents. In M. H. Borthstein (Ed.), *Handbook of parenting: Vol. 1. Children and parenting* (2nd ed., pp. 103-133). Mahwah, NJ: Lawrence Erlbaum Associates.
- Stephens, R. C., Thibodeaux, L., Sloboda, Z., & Tonkin, P. (2007). Research note: An empirical study of adolescent student attrition. *Journal of Drug Issues, 37*, 475-487.
- Stevens, J. (1996). *Applied multivariate statistics for the social sciences* (3rd ed.). Mahway, NJ: Lawrence Erlbaum Associates.
- Stolz, H. E., Barber, B. K., & Olsen, J. A. (2005). Toward disentangling fathering and mothering: An assessment of relative importance. *Journal of Marriage and Family, 67*, 1076-1092.
- Stone, M. R., & Brown, B. B. (1999). Identity claims and projections: Descriptions of self and crowds in secondary school. In J. A. McLellan & M. J. V. Pugh (Eds.), *The role of peer groups in adolescent social identity: Exploring the importance of stability and change* (pp. 7-20). San Francisco, CA: Jossey-Bass.
- Sturman, D. A., & Moghaddam, B. (2011). The neurobiology of adolescence: changes in brain architecture, functional dynamics, and behavioral tendencies. *Neuroscience and Biobehavioral Reviews, 35*, 1704-1712.
- Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*, 420-433.
- Subrahmanyam, K., & Smahel, D. (2011). *Digital youth: The role of media in development*. New York, NY: Springer.

- Suess, G., Grossman, K. E., & Sroufe, L. A. (1992). Effects of infant attachment to mother and father on quality of adaptation in preschool: From dyadic to individual organization of self. *International Journal of Behavioural Development, 15*, 43-65.
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: Norton.
- Sullivan, C. M., Rumpitz, M. H., Campbell, R., Eby, K. K., & Davidson II, W. S. (1996). Retaining participants in longitudinal community research: A comprehensive protocol. *Journal of Applied Behavioral Science, 32*, 262-276.
- Summers-Effler, E. (2004). Little girls in women's bodies: Social interaction and the strategizing of early breast development. *Sex Roles: A Journal of Research, 51*, 29-44.
- Susman, S., Dent, C. W., McAdams, L. A., Stacy, A. W., Burton, D., & Flay, B. R. (1994). Group self-identification and adolescent cigarette smoking. *Journal of Abnormal Psychology, 103*, 576-580.
- Susman, E. J., & Rogol, A. (2004). Puberty and psychological development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (2nd ed., pp. 15-44). Hoboken, NJ: John Wiley & Sons.
- Syed, M., & Seiffge-Krenke, I. (2013). Personality development from adolescence to emerging adulthood: Linking trajectories of ego development to the family context and identity formation. *Journal of Personality and Social Psychology, 104*, 371-384.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Tafarodi, R. W., & Swann, W. B. Jr. (2001). Two-dimensional self-esteem: Theory and measurement. *Personality and Individual Differences, 31*, 653-673.
- Tarrant, M., Mackenzie, L., & Hewitt, L. A. (2006). Friendship group identification, multidimensional self-concept, and experience of developmental tasks in adolescence. *Journal of Adolescence, 29*, 627-640.

- Taylor, S. A. (2009). Engaging and retaining vulnerable youth in a short-term longitudinal qualitative study. *Qualitative Social Work, 8*, 391-409.
- Thelwell, M. (2008). Social networks, gender and friending: An analysis of MySpace member profiles. *Journal of the American Society for Information Science and Technology, 59*, 1321-1330.
- Thomas, B. S., & Hsiu, L. T. (1993). The role of selected risk factors in predicting adolescent drug use and its adverse consequences. *International Journal of the Addictions, 28*, 1549-1563.
- Thompson, R. A. (2000). The legacy of early attachments. *Child Development, 71*, 145-152.
- Thompson, M., O'Neill Grace, C., & Cohen, L. J. (2001). *Best friends, worst enemies: understanding the social lives of children*. New York, NY: Ballantine.
- Trinke, S. J., & Bartholomew, K. (1997). Hierarchies of attachment relationships in young adulthood. *Journal of Social and Personal Relationships, 14*, 603-625.
- Turner, H. A. (1994). Gender and social support: Taking the bad with the good? *Sex Roles, 30*, 521-541.
- Turner, R. J., & Llyod, D. A. (1999). The stress process and the social distribution of depression. *Journal of Health and Social Behavior, 40*, 374-404.
- Urberg, K. A., Degirmencioglu, S. M., & Pilgrim, C. (1997). Close friend and group influence on adolescent substance use. *Developmental Psychology, 33*, 834-844.
- Urberg, K. A., Degirmencioglu, S. M., Tolson, J. M., & Halliday-Scher, K. (1995). The structure of adolescent peer networks. *Developmental Psychology, 31*, 540-547.
- Urberg, K. A., Degirmencioglu, S. M., Tolson, J. M., & Halliday-Scher, K. (2000). Adolescent social crowds: Measurement and relationship to friendships. *Journal of Adolescent Research, 15*, 427-445.

- Valkenburg, P., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology, 43*, 267–277.
- Valkenburg, P., & Peter, J. (2009a). The effects of instant messaging on the quality of adolescents' existing friendships: A longitudinal study. *Journal of Communication, 59*, 79–97.
- Valkenburg, P. M., & Peter, J. (2009b). Social consequences of the Internet for adolescents: a decade of research. *Current Directions in Psychological Science, 18*, 1–5.
- Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: an integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health, 48*, 121–127.
- Van Dulmen, M. H. M., Goncy, E. A., Haydon, K. C., & Collins, W. A. (2008). Distinctiveness of adolescent and emerging adult romantic relationship features in predicting externalizing behavior problems. *Journal of Youth and Adolescence, 37*, 336–345.
- Vandell, D. L. (2000). Parents, peer groups, and other socializing influences. *Developmental Psychology, 36*, 699–710.
- Van IJzendoorn, M. (1992). Intergenerational transmission of parenting: A review of studies in non-clinical populations. *Developmental Review, 12*, 76–99.
- Van IJzendoorn, M. H. (1995). Adult attachment presentations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117*, 387–403.
- Van Wel, F., Linssen, H., & Abma, R. (2000). The parental bond and the well-being of adolescents and young adults. *Journal of Youth and Adolescence, 29*, 307–318.

- Van Zalk, N., Van Zalk, M. H. W., & Kerr, M. (2011). Socialization of Social Anxiety in Adolescent Crowds. *Journal of Abnormal Child Psychology*, *39*, 1239-1249.
- Vazsonyi, A. T. (2004). Parent-adolescent relations and problem behaviors. *Marriage and Family Review*, *35*, 161-187.
- Vazsonyi, A. T., & Belliston, L. M. (2006). The cultural and developmental significance of parenting processes in adolescent anxiety and depression symptoms. *Journal of Youth and Adolescence*, *35*, 491-505.
- Villarruel, A. M., Jemmott, J. B., III, & Jemmott, L. S. (2006). A randomized controlled trial testing an HIV prevention intervention for Latino youth. *Archives of Pediatrics & Adolescent Medicine*, *160*, 772-777.
- Vitaro, F., Brendgen, M., & Tremblay, R. E. (2000). Influence of deviant friends on delinquency: Searching for moderator variables. *Journal of Abnormal Child Psychology*, *28*, 313-325.
- Vivona, J. M. (2000). Parental attachment styles of late adolescents: Qualities of attachment relationships and consequences for adjustment. *Journal of Counseling Psychology*, *47*, 316-329.
- Vondra, J., & Garbarino, J. (1988). Social influences on adolescent behavior problems. In S. Salzinger, J. Antrobus, & M. Hammer (Eds.), *Social networks of children, adolescents, and college students* (pp. 195-224). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Ward, M. J., & Carlson, E. A. (1995). Associations among adult attachment representations, maternal sensitivity, and infant-mother attachment in a sample of adolescent mothers. *Child Development*, *66*, 69-79.
- Warren, S. L., Huston, L., Egeland, B., & Sroufe, L. A. (1997). Child and adolescent anxiety disorders and early attachment. *Journal of the American Academy of Child and Adolescent Psychiatry*, *36*, 637-644.

- Waterman, A. S. (1988). Identity status theory and Erikson's theory: Commonalities and differences. *Developmental Review, 8*, 185-208.
- Waters, E., & Cummings, E. M. (2000). A secure base from which to explore close relationships. *Child Development, 71*, 164-172.
- Waters, E., Crowell, J., Elliott, M., Corcoran, D., & Treboux, D. (2002). Bowlby's secure base theory and the social/personality psychology of attachment styles: Work(s) in progress. *Attachment and Human Development, 4*, 230-242.
- Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment security in infancy and early adulthood: A 20-year longitudinal study. *Child Development, 71*, 684-689.
- Way, N., & Greene, M. L. (2006). Trajectories of perceived friendship quality during adolescence: The patterns and contextual predictors. *Journal of Research on Adolescence, 16*, 293-320.
- Wegner, D. M., & Smart, L. (1997). Deep cognitive activation: A new approach to the unconscious. *Journal of Consulting and Clinical Psychology, 65*, 984-995.
- Wei, M., Russell, D. W., Zakalik, R. A. (2005). Adult attachment, social self-efficacy, self-disclosure, loneliness, and subsequent depression for freshman college students: A longitudinal study. *Journal of Counseling Psychology, 52*, 602-614.
- Weimer, B. L., Kerns, K. A., & Oldenburg, C. M. (2004). Adolescents' interactions with a best friend: Associations with attachment style. *Journal of Experimental Child Psychology, 88*, 102-120.
- Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. (2008). Individual differences in infant-caregiver attachment: Conceptual and empirical aspects of security. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (2nd ed., pp. 78-101). New York, NY: The Guilford Press.

- Weiss, R. S. (1982). Attachment in adults. In C. M. Parkes & J. Stevenson-Hinde (Eds.), *The place of attachment in human behavior* (pp. 171-194). New York, NY: Basic Books.
- Weiss, R. S. (1991). The attachment bond in childhood and adulthood. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 66-76). New York, NY: Tavistock/Routledge.
- Weller, E. B., & Weller, R. A. (2000). Depression in adolescents: Growing pains or true morbidity? *Journal of Affective Disorders, 61*, 9-13.
- Wellman, B., Won, R. Y., Tindall, D., & Nazer, N. (1996). A decade of network change: Turnover, persistence and stability in personal communities. *Social Networks, 19*, 27-50.
- Welsh, D. P., Grello, C. M., & Harper, M. S. (2003). When love hurts: Depression and adolescent romantic relationships. In P. Florsheim (Ed.), *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications* (pp. 185-211).
- Werebe, M. G. (1987). Friendship and dating relationships among French adolescents. *Journal of Adolescence, 10*, 269-289.
- Werner, N. E., & Silbereisen, R. K. (2003). Family relationship quality and contact with deviant peers as predictors of adolescent problem behaviors: The moderating role of gender. *Journal of Adolescent Research, 18*, 454-480.
- West, M., Rose, M. S., Spreng, S., Sheldon-Keller, A., & Adam, K. (1998). *Adolescent Attachment Questionnaire: A brief assessment of attachment in adolescence, 27*, 661-673.
- Wilkinson, R. B. (2004). The role of parental and peer attachment in the psychological health and self-esteem of adolescents. *Journal of Youth and Adolescence, 33*, 479-493.

- Wilkinson, R. B. (2006a). The relationship of attachment working models to cognitive self-schema. *Proceedings of the 2006 Joint Conference of the Australian Psychological Society and the New Zealand Psychological Society*, 489-493. Auckland, New Zealand: The Australian Psychological Society.
- Wilkinson, R. B. (2006b). Age and sex differences in the influence of attachment relationships on adolescent psychological health. *The Australian Educational and Developmental Psychologist*, 23, 87-104.
- Wilkinson, R. B. (2008). Development and properties of the Adolescent Friendship Attachment Scale. *Journal of Youth and Adolescence*, 37, 1270-1279.
- Wilkinson, R. B. (2010a). Best friend attachment versus peer attachment in the prediction of adolescent psychological adjustment. *Journal of Adolescence*, 33, 709-717.
- Wilkinson, R. B. (2010b). Assessing attachment in adolescents and young adults: Development of a general short-form of the Experiences in Close Relationships Questionnaire- Revised [Abstract]. *Proceedings of the 2010 Biannual Conference of The International Association for Relationship Research*, 114. Herzliya, Israel: Interdisciplinary Center (IDC) Herzliya.
- Wilkinson, R. B., & Goh, Y. L. D. (2013). *Structural, age, and sex differences for a short form of the Inventory of Parent and Peer Attachment: The IPPA-45*. Manuscript submitted for publication.
- Wilkinson, R. B., & Kraljevic, M. (2004). Adolescent psychological health and school attitudes: The impact of attachment relationships. *Proceedings of the Australian Psychological Society's Psychology of Relationships Interest Group 4th Annual Conference*, 150-155. Melbourne, Australia: The Australian Psychological Society.
- Wilkinson, R. B., & Parry, M. M. (2004). Attachment styles, quality of attachment relationships, and components of self-esteem in adolescence. *Proceedings of the 39th*

Australian Psychological Society Annual Conference, 301-305. Melbourne, Australia: The Australian Psychological Society.

Wilkinson, R. B., & Walford, W. A. (2001). Attachment and personality in the psychological health of adolescents. *Personality and Individual Differences*, *31*, 473-484.

Willet, J. B., & Sayer, A. G. (1994). Using covariance structure analysis to detect correlates and predictors of individual change over time. *Psychological Bulletin*, *116*, 363-381.

Willet, J. B., Singer, J. D., & Martin, N. C. (1998). The design and analysis of longitudinal studies of development and psychopathology in context: Statistical models and methodological recommendations. *Development and Psychopathology*, *10*, 395-426.

Williams, A. (2003). Adolescents' relationships with parents. *Journal of Language and Social Psychology*, *22*, 58-65.

Williams, S. K., & Kelly, F. D. (2005). Relationships among involvement, attachment, and behavioral problems in adolescence: Examining father's influence. *Journal of early Adolescence*, *25*, 168-196.

Williams, P. G., Holmbeck, G. N., & Greenley, R. N. (2002). Adolescent health psychology. *Journal of Consulting and Clinical Psychology*, *70*, 828-842.

Williams, R. H., & Zimmerman, D. W. (1996). Are simple gain scores obsolete? *Applied Psychological Measurement*, *20*, 59-69.

Wilson, J., & Wilkinson, R. B. (2007). (10 – 11 November, 2007). *Measuring adolescent attachment relationships: A quantitative review*. Paper presented at the Combined 7th Annual Conference of the Australian Psychological Society's Psychology of Relationships Interest Group and International Association for Relationship Research Mini-conference, Melbourne, Australia.











- Wilson, J. M., & Wilkinson, R. B. (2012). The self-report measurement of adolescent attachment relationships: A systematic review and critique. *Journal of Relationships Research, 3*, 81-94.
- Wineman, N. M., & Durand, E. (1992). Incentives and rewards for subjects in nursing research. *Western Journal of Nursing Research, 14*, 526-533.
- Wintre, M. G., & Yaffe, M. (2000). First-year students' adjustment to university life as a function of relationships with parents. *Journal of Adolescent Research, 15*, 9-37.
- Wintre, M. G., Yaffe, M., & Crowley, J. (1995). Perception of parental reciprocity scale (POPRS): Development and validation with adolescents and young adults. *Journal of Youth and Adolescence, 22*, 1-15.
- Wojslawowicz Bowker, J. C., Rubin, K. H., Burgess, K. B., Booth-LaForce, C., & Rose-Krasnor, L. (2006). Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill-Palmer Quarterly, 52*, 671-693.
- Wood, M. D., Read, J. P., Mitchell, R. E., & Brand, N. H. (2004). Do parents still matter? Parent and peer influences on alcohol involvement among recent high school graduates. *Psychology of Addictive Behaviors, 18*, 19-30.
- World Health Organization (2010). *Child and adolescent health and development: Progress report 2009: Highlights*. Switzerland: WHO Press.
- Youniss, J., & Ketterlinus, R. D. (1987). Communication and connectedness in mother- and father-adolescent relationships. *Journal of Youth and Adolescence, 16*, 265-280.
- Youniss, J., McLellan, J. A., & Strouse, D. (1994). "We're popular but we're not snobs": Adolescents describe their crowds. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Advances in adolescent development: Vol. 6. Personal relationships during adolescence* (pp. 101-122). Newbury Park, CA: Sage.
- Youniss, J., & Smollar, J. (1985). *Adolescent relations with mothers, fathers, and friends*. Chicago, IL: University of Chicago Press.

- Youniss, J. & Smollar, J. (1989). Adolescents' interpersonal relationships in social contexts. In T. J. Branje & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 300-316). Hoboken, NJ: John Wiley & Sons.
- Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. H. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology, 12*, 443-466.
- Zani, B. (1993). Dating and interpersonal relationships in adolescence. In S. Jackson & T. H. Rodriguez (Eds.), *Adolescence and its social worlds* (pp. 95-119). Mahwah, NJ: Lawrence Erlbaum Associates.
- Zarrett, N., & Lerner, R. M. (2008). Ways to promote the positive development of children and youth. Publication #2008-11. *Child Trends*, 1-5.
- Zeifman, D., & Hazan, C. (1997). A process model of adult attachment formation. In S. Duck (Ed.), *Handbook of personal relationships: Theory, research and interventions* (2nd ed., pp. 179-195). New York, NY: John Wiley & Sons.
- Zeifman, D., & Hazan, C. (2008). Pair bonds as attachments: Reevaluating the evidence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 436-455). New York, NY: The Guilford Press.
- Zhang, H., Chan, D. K. S., & Teng, F. (2011). Transfer of attachment functions and adjustment among young adults in China. *Journal of Social Psychology, 151*, 257-273.
- Zimmer-Gembeck, M. J. (1999). Stability, change and individual differences in involvement with friends and romantic partners among adolescent females. *Journal of Youth and Adolescence, 28*, 419-438.

- Zimmer-Gembeck, M. J. (2002). The development of romantic relationships and adaptations in the system of peer relationships. *Journal of Adolescent Health, 31*, 216-225.
- Zimmer-Gembeck, M. J., & Collins, W. A. (2003). Autonomy development during adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 175-204). Malden, MA: Blackwell Publishing Ltd.
- Zimmer-Gembeck, M. J., & Petherick, J. (2006). Intimacy dating goals and relationship satisfaction during adolescence and emerging adulthood: Identity formation, age, and sex as moderators. *International Journal of Behavioral Development, 30*, 167-177
- Zimmer-Gembeck, M. J., Siebenbruner, J., & Collins, W. A. (2001). Diverse aspects of dating: Associations with psychosocial functioning from early to middle adolescence. *Journal of Adolescence, 24*, 313-336.
- Zimmermann, P. (1999). Structure and functions of internal working models of attachment and their role for emotional regulation. *Attachment and Human Development, 1*, 291-306.
- Zimmermann, P. (2004). Attachment representations and characteristics of friendship relations during adolescence. *Journal of Experimental Child Psychology, 88*, 83-101.
- Zimmermann, P., & Becker-Stoll, F. (2002). Stability of attachment representations during adolescence: The influence of ego-identity status. *Journal of Adolescence, 25*, 107-124.

Appendix A

This question is concerned with the important relationships in your life. In the spaces below, please list all the important people in your life. That is, list those people that you *currently feel a strong emotional tie to, regardless of whether that tie is positive, negative or mixed*. The order in which you list these people is not important, and you can provide either a first name or nickname. However, if two people have the same names, please list them differently (ie. nickname for one, first name for the other). It is not necessary to fill all available spaces but try and list as many as you can. Once you have listed the important people in your life, please indicate whether each person is male or female, and what relation that person is to you. If the person is a brother, sister, or friend please specify if older or younger than yourself.

NAMES OR NICKNAMES OF IMPORTANT PEOPLE (Do not use the same name for more than one person.)	SEX (M OR F)	RELATIONSHIP Eg. mother, father, sister, brother, best friend, girlfriend or boyfriend Other (please specify)
		
		
		
		
		
		
		
		
		
		

From the list on the previous page, please list the names or nicknames of *up to three* important people in your life that apply to each statement listed below. List people in order of importance. That is, please make sure that the person you list *first* for a particular question is the *most important one*, the second is the next most important, and so on. You do not need to list three people for every statement; just list those that are relevant to the statement.

1a. Who do you talk to when you are worried about something or when something bad happens to you?

 A. _____ B. _____ C. _____

1b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Mostly</i>	<i>Always</i>
<i>Satisfied = 1</i>	<i>Satisfied = 2</i>	<i>Satisfied = 3</i>	<i>Satisfied = 4</i>	<i>Satisfied = 5</i>

 A. _____ B. _____ C. _____

2a. Who do you turn to for comfort when you are feeling upset or down?

 A. _____ B. _____ C. _____

2b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Mostly</i>	<i>Always</i>
<i>Satisfied = 1</i>	<i>Satisfied = 2</i>	<i>Satisfied = 3</i>	<i>Satisfied = 4</i>	<i>Satisfied = 5</i>

 A. _____ B. _____ C. _____

3a. Who do you feel will always be there for you, if you needed him/ her?


 A. _____ B. _____ C. _____

3b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Mostly</i>	<i>Always</i>
<i>Satisfied = 1</i>	<i>Satisfied = 2</i>	<i>Satisfied = 3</i>	<i>Satisfied = 4</i>	<i>Satisfied = 5</i>


 A. _____ B. _____ C. _____

4a. Who do you feel you can always count on no matter what?


 A. _____ B. _____ C. _____

4b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i> Satisfied = 1	<i>Rarely</i> Satisfied = 2	<i>Sometimes</i> Satisfied = 3	<i>Mostly</i> Satisfied = 4	<i>Always</i> Satisfied = 5
-------------------------------	--------------------------------	-----------------------------------	--------------------------------	--------------------------------


 A. _____ B. _____ C. _____

5a. Who do you most like to spend time with?

 A. _____ B. _____ C. _____

5b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i> Satisfied = 1	<i>Rarely</i> Satisfied = 2	<i>Sometimes</i> Satisfied = 3	<i>Mostly</i> Satisfied = 4	<i>Always</i> Satisfied = 5
-------------------------------	--------------------------------	-----------------------------------	--------------------------------	--------------------------------

 A. _____ B. _____ C. _____

6a. Who is important for you to see/talk with regularly?

 A. _____ B. _____ C. _____

6b. How **satisfied** are you with the **response** you get in the above situation?
(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i> Satisfied = 1	<i>Rarely</i> Satisfied = 2	<i>Sometimes</i> Satisfied = 3	<i>Mostly</i> Satisfied = 4	<i>Always</i> Satisfied = 5
-------------------------------	--------------------------------	-----------------------------------	--------------------------------	--------------------------------

 A. _____ B. _____ C. _____

7a. Who do you not like to be away from?

 A. _____ B. _____ C. _____

7b. How *satisfied* are you with this person's *response* to your need not to be away from them?

(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i> Satisfied = 1	<i>Rarely</i> Satisfied = 2	<i>Sometimes</i> Satisfied = 3	<i>Mostly</i> Satisfied = 4	<i>Always</i> Satisfied = 5
-------------------------------	--------------------------------	-----------------------------------	--------------------------------	--------------------------------

 A. _____ B. _____ C. _____

8a. Who do you miss the most during separations?

 A. _____ B. _____ C. _____

8b. How *satisfied* are you with this person's *response* to your need to be near them?

(please rate for each person above on the scale below, from 1 to 5)

<i>Never</i> Satisfied = 1	<i>Rarely</i> Satisfied = 2	<i>Sometimes</i> Satisfied = 3	<i>Mostly</i> Satisfied = 4	<i>Always</i> Satisfied = 5
-------------------------------	--------------------------------	-----------------------------------	--------------------------------	--------------------------------

 A. _____ B. _____ C. _____

Appendix B

Thinking about your relationships with other people, how much do the statements below describe your feelings? *For each thing, put a ✓ in one box only.*

	Disagree Strongly	Disagree	Neutral/ Mixed	Agree	Strongly Agree
1. I prefer not to show others how I feel deep down.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I often worry that other people close to me don't really love me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I find it difficult to allow myself to depend on other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I often worry that other people don't care as much about me as I care about them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I am very comfortable being close to other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Sometimes people change their feelings about me for no apparent reason.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. It is usually easy for me to discuss my problems and concerns with other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. My desire to be close sometimes scares people away.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. It helps to turn to others for support in times of need.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. My relationships with people make me doubt myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I am nervous when people get too emotionally close to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. When I show my feelings to people I care about, I'm afraid that they will not feel the same about me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I find it easy to depend on other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I am afraid that once somebody gets to know me, he or she won't like who I am.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. It is easy for me to be affectionate with other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. It makes me mad that I don't get the affection and support I need from other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I feel comfortable sharing private thoughts and feelings with other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I worry a lot about relationships.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I feel comfortable depending on other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I find that other people don't want to be as close as I would like.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix C

Here are some problems young people can have from time to time. How often have you felt like each of these in the last four weeks? *For each thing, put a ✓ in one box only.*

In the past four weeks.....

	Rarely or not at all	Sometimes	Often	Most or all the time
1. I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I felt that I was not as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I felt hopeless about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I was unhappy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I had episodes of crying.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix D

Here are some things young people have said about themselves. Thinking about how you feel about yourself, do you agree or disagree? *For each thing, put a ✓ in one box only.*

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1. I tend to under-rate myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am very good at the things I do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am very comfortable with myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am almost always able to accomplish what I try to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I am secure in my sense of self-worth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. It is sometimes unpleasant for me to think about myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I have a negative attitude towards myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. At times, I find it difficult to achieve the things that are important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel great about who I am.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Sometimes I'm not very good at dealing with challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I never doubt my personal worth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I perform very well at many things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I sometimes fail to fulfil my goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I am very talented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I do not have enough respect for myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I wish I were more skilful in my activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix E

Here are some things young people have said are stressful. Thinking about your own experiences, how stressful is each for you? *For each thing, put a ✓ in one box only.*

	Not at All Stressful	A Little Stressful	Moderately Stressful	Quite Stressful	Very Stressful
1. Lack of respect from my teacher(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Getting up early to go to school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Being judged by my friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Disagreements between me and either parent (or both).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Breaking up with my boyfriend/ girlfriend.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Not getting enough time for leisure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Having to make decisions about future work or education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Concerns about my future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Not having enough time for my boyfriend/ girlfriend.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Lack of understanding/ trust from my parent(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Having to study things I do not understand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Disagreements between my parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Pressure to fit in with my peers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Peers hassling me for the way I look.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Making the relationship with my boyfriend/ girlfriend work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Not enough money to buy what I need/ want.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Being hassled for not fitting in.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Being ignored/ rejected by the person I want to go out with.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Obeying petty rules at home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Having to take on more responsibilities with growing older.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix F

Here are some things young people have said about being at school or college.
Thinking about your own experiences, do you agree or disagree? *For each thing, put a ✓ in one box only.*

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I learn a lot of interesting and useful things at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I get fed up with teachers telling me what to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I like being at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Teachers often treat you like you were little kids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I try hard at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Teachers take an interest in you and help you a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I have been bullied by other kids at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I find school work easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Sometimes I feel left out of things at school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I am happy to find an excuse to stay away from school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix G

Do you currently have a boyfriend or girlfriend? If so, how long have you been going together? *Put a ✓ in one box only.*

- No, I am not currently involved with anyone (go to question 19)
- Yes, we've been together for **less than three months**
- Yes, we've been together between **three months and one year**
- Yes, we've been together **more than one year**

Appendix H

Table H presents the distribution of romantic status for early and late adolescents according to gender. The majority of adolescents ($n = 342$, 65.5%) regardless of age reported not being in a romantic relationship whereas 172 adolescents (33.0%) reported one of the three relationship categories. There were approximately 3.5 times more late adolescents ($n = 133$) than early adolescents ($n = 37$) who reported involvement in a current romantic relationship, and twice as many female adolescents ($n = 115$) than male adolescents ($n = 57$) with romantic partners. Four early adolescent males and four early adolescent females did not identify their romantic status, and were omitted from subsequent analyses. The number of adolescents reporting romantic relationships of more than three months' duration was fairly low (Males = 37, Females = 72) particularly among the early adolescent females. Consequently, the decision was made to recode the different categorizations of romantic relationships into one of two conditions of "No Romantic Relationship" and "In a Romantic Relationship".

Table H

Distribution of Romantic Status According to Cohort and Sex

	Frequency Reported (%)				
	1	2	3	4	Missing
Early Adolescents (<i>n</i> = 192)					
Males (<i>n</i> = 78)	47 (60.3)	12 (15.4)	8 (10.3)	7 (9.0)	4 (5.1)
Females (<i>n</i> = 114)	100 (87.7)	7 (6.1)	1 (.9)	2 (1.8)	4 (3.5)
Late Adolescents (<i>n</i> = 330)					
Males (<i>n</i> = 92)	62 (67.4)	8 (8.7)	17 (18.5)	5 (5.4)	0 (0.0)
Females (<i>n</i> = 238)	133 (55.9)	36 (15.1)	45 (18.9)	24 (10.1)	0 (0.0)
Total (<i>N</i> = 522)	342 (65.5)	63 (12.1)	71 (13.6)	38 (7.3)	8 (1.5)

Note. 1 = No Romantic Relationship, 2 = Relationship < 3 Months, 3 = Relationship Between 3 Months and 1 Year, 4 = Relationship > 1 Year.

Appendix I

Forty-one different types of relationships were identified in total. The nuclear family consisting of mothers or step-mothers, fathers or step-fathers, brothers and sisters represented 14.63% of relationships nominated while extended family members such as uncles, aunts, cousins, nieces, nephews, grandparents, grandaunt, great grandmother and in-laws represented an additional 26.83% of all relationships nominated. Peer relationships such as friends, best friends, current and previous romantic partners, church friends, and teammates comprised 17.07% of the relationship categories. Non-relatives made up 31.71% of all relationship types and were generally adults in roles of authority such as mentors, managers, pastors, psychologists, coaches, and teachers, or with whom the adolescent came into frequent contact, inclusive of personal help, neighbors, siblings' or relatives' romantic partners, and friends of parents. Nominations of God, pets, idols and foster siblings comprised the final 9.76% of relationship types reported.

Due to minimal reporting of some relationship types, all relationships were further categorized into 1 of 13 attachment figures. Mothers were the most frequently nominated attachment figure, followed by friends, fathers, best friends, sisters, brothers, relatives, boy/girlfriends, other non-relatives, ex-boy/girlfriends, non-person, step-fathers and step-mothers in descending order. The distribution of attachment figures and the corresponding number of nominations made for each attachment figure are presented in Table I.

Table I

Distribution of Attachment Figures and Corresponding Number of Nominations

Attachment Figure	Frequency (<i>n</i> = 511)		
	Reported (%)	Not reported (%)	Number of nominations
Mother	453 (88.6)	58 (11.4)	0 - 2
Friend	392 (76.7)	119 (23.3)	0 - 9
Father	388 (75.9)	123 (24.1)	0 - 1
Best Friend	318 (62.2)	193 (37.8)	0 - 10
Sister	242 (47.4)	269 (52.6)	0 - 4
Brother	229 (44.8)	282 (55.2)	0 - 6
Other Relatives	157 (30.7)	354 (69.3)	0 - 8
Boy/Girlfriend	149 (29.2)	362 (70.8)	0 - 2
Other Non-Relatives	50 (9.8)	461 (90.2)	0 - 5
Ex-Boy/Girlfriend	31 (6.1)	480 (93.9)	0 - 3
Non-Persons	22 (4.3)	489 (95.7)	0 - 4
Step-Father	22 (4.3)	489 (95.7)	0 - 1
Step-Mother	10 (2.0)	501 (98.0)	0 - 1

These findings are consistent with previous research demonstrating partners (if present), mothers, fathers, siblings and best friends or friends as the most commonly listed attachment figures in the attachment hierarchy (Rowe & Carnelley, 2005; Trinke & Bartholomew, 1997). Romantic partners were not among the five most frequently nominated relationships as the majority of adolescents in this study did not report current romantic relationships. That said, romantic partners featured prominently as a member of the attachment network for the majority of adolescents (87.65%) who reported current romantic relationships ($n = 170$). These findings also parallel those of Freeman and Brown (2001) who reported an adult (i.e., mother) as the most frequently nominated individual, with adults also comprising the two least frequently nominated categories (i.e., step-mothers and step-fathers).

Appendix J

Did you have your FIRST romantic relationship in the past twelve months?

Put a ✓ in one box only.

Yes

No

How many different girlfriends or boyfriends have you had in the past twelve months?

Put a ✓ in one box only.

None

One

Two

Three

More than
three

Are you still with the same boyfriend/ girlfriend from twelve months ago?

Put a ✓ in one box only.

Yes

No

Appendix K

Table K presents the distribution of current romantic status for early and late adolescents according to gender. The majority of adolescents ($n = 100$, 64.1%) did not report a romantic relationship whereas 56 adolescents (35.9%) reported one of the three relationship categories. Approximately 13 times as many late adolescents ($n = 52$) as early adolescents ($n = 4$) were currently involved in a romantic relationship, with 75.0% of those romantically-involved comprising late adolescent females. Only four early adolescent females reported romantic relationships irrespective of relationship length whilst none of the early adolescent males indicated current romantic involvement. Although fewer romantic relationships were reported, comparisons (see Appendix H) generally indicated an increase in the percentage of adolescents reporting romantic relationships of at least one year, particularly among late adolescents. These categories of romantic relationships were accordingly recoded into one of two conditions of No Romantic Relationship and In a Romantic Relationship.

Table K

Distribution of Romantic Status According to Cohort and Sex in Wave 2

	Frequency Reported (%)			
	No	< 3Months	3 – 12 Months	> 1 Year
Early Adolescents (<i>n</i> = 53)				
Male (<i>n</i> = 9)	9 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)
Female (<i>n</i> = 44)	40 (90.9)	3 (6.8)	0 (0.0)	1 (2.3)
Late Adolescents (<i>n</i> = 103)				
Male (<i>n</i> = 20)	10 (50.0)	1 (5.0)	2 (10.0)	7 (35.0)
Female (<i>n</i> = 83)	41 (49.4)	8 (9.6)	14 (16.9)	20 (24.1)
Total (<i>N</i> = 156)	100 (64.1)	12 (7.7)	16 (10.3)	28 (17.9)

Appendix L

Table L presents the distribution of attachment figures and the corresponding number of nominations made for each attachment figure. In Wave 2, mothers were still the most frequently nomination attachment figure followed by friends, after which best friends replaced fathers as the next most nominated attachment figure with fathers in fourth place. Sisters were the fifth most nominated attachment figure followed by boy/girlfriends who were now ranked above brothers and other relatives. Other non-relatives slipped one rank to below that of ex-boy/girlfriends to become the 10th most nominated attachment figure followed by non-persons, step-fathers and finally step-mothers as demonstrated previously in Wave 1 (see Appendix I). Overall, mothers retained the primary position as the most frequently nominated attachment figure in the attachment network with peers (i.e., friends, best friends, boy/girlfriends and ex-boy/girlfriends) becoming increasingly important in adolescents' attachment network.

Paired-samples t-tests conducted revealed significant differences in the frequency with which mothers, $t(155) = -1.98, p = .049$, fathers, $t(155) = -2.06, p = .041$, brothers, $t(155) = -2.34, p = .020$, and ex-boy/girlfriends, $t(155) = 2.02, p = .045$, were nominated, with the former three decreasing in nominations, and the latter increasing in frequency. It is worth noting that the mean difference in nominations for mothers and ex-boy/girlfriends at the two waves of data collection was marginal. Moreover, further comparisons revealed that the significant decreases in nominations of mothers, $t(102) = -2.10, p = .038$, and fathers, $t(102) = -2.68, p = .009$, were reported solely by late adolescents.

These findings reaffirm findings from the attachment literature demonstrating the primacy of mothers in the attachment network (Margolese et al., 2005; Trinke & Bartholomew, 1997), and highlight the decreased importance of other familial members

(i.e., fathers and brothers) in the attachment network (Doherty & Feeney, 2004). In turn, the decrease in the number of family members reported in adolescents' attachment networks accord with research previously demonstrating that adolescent attachment networks expand to incorporate extrafamilial members wherein peers are increasingly turned to for fulfillment of attachment needs (Bowlby, 1969/1982; Scharf & Mayseless, 2007; Weiss, 1991).

Table L

Distribution of Attachment Figures and Corresponding Number of Nominations in Wave 2

Attachment Figure	Frequency (<i>N</i> = 156)		
	Reported (%)	Not reported (%)	Number of nominations
Mother	135 (86.5)	21 (13.5)	0-2
Friend	123 (78.8)	33 (21.2)	0-9
Best Friend	112 (71.8)	44 (28.2)	0-8
Father	110 (70.5)	46 (29.5)	0-1
Sister	74 (47.4)	82 (52.6)	0-3
Boy/Girlfriend	54 (34.6)	102 (65.4)	0-1
Brother	50 (32.1)	106 (67.9)	0-4
Other Relatives	43 (27.6)	113 (72.4)	0-6
Ex-Boy/Girlfriend	22 (14.1)	134 (85.9)	0-2
Other Non-Relatives	16 (10.3)	140 (89.7)	0-2
Non-Persons	12 (7.7)	144 (92.3)	0-2
Step-Father	7 (4.5)	149 (95.5)	0-1
Step-Mother	4 (2.6)	152 (97.4)	0-1

Appendix M

Paired samples t-tests were subsequently conducted according to Cohort and Sex to determine if adolescent adjustment varied between the two waves of data collection as a function of age or gender respectively. There were no statistical differences in scores across time on all four indices of adolescent wellbeing for both early adolescents (Depression: $t(52) = -.85, ns$, Self-esteem: $t(52) = 1.44, ns$, Stress: $t(52) = .08, ns$, and School Attitude: $t(52) = 1.95, ns$) and late adolescents (Depression: $t(102) = .37, ns$, Self-esteem: $t(102) = -1.75, ns$, Stress: $t(102) = .08, ns$, and School Attitude: $t(78) = -1.09, ns$). Similarly, there were no statistical differences in Depression, (Male: $t(28) = -.63, ns$, Female: $t(126) = .01, ns$), Self-esteem, (Male: $t(28) = -.31, ns$, Female: $t(126) = -.52, ns$), Stress, (Male: $t(28) = .70, ns$, Female: $t(126) = -.12, ns$), or School Attitude (Male: $t(22) = -.44, ns$, Female: $t(108) = .62, ns$) between male and female adolescents in the previous twelve months. Means and standard deviations for the variables of adolescent adjustment as a function of age and sex across both waves of data collection are shown in Table M.

Table M

Means and Standard Deviations for the Adolescent Adjustment Variables According to Cohort and Sex for All Adolescents in Wave 1 and Wave 2

	Early Adolescents (<i>n</i> = 53)				Late Adolescents (<i>n</i> = 103)			
	Males		Females		Males		Females	
	<i>(n</i> = 9)		<i>(n</i> = 44)		<i>(n</i> = 20)		<i>(n</i> = 83)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Depression								
Wave 1	14.89	2.26	15.55	5.12	17.45	5.04	20.96	6.34
Wave 2	14.11	3.52	16.55	5.48	18.55	5.59	20.42	6.04
Self-esteem								
Wave 1	54.11	9.12	57.07	8.97	53.25	11.46	45.69	11.63
Wave 2	56.67	4.66	54.52	10.19	52.95	11.54	47.64	9.84
Stress								
Wave 1	45.11	10.68	42.70	13.48	38.60	10.81	48.93	9.63
Wave 2	43.22	11.94	42.91	11.93	37.95	9.91	49.00	8.89
School Attitude					(At W2, <i>n</i> = 14)		(At W2, <i>n</i> = 65)	
Wave 1	28.89	4.04	30.26	3.79	28.05	3.41	28.42	3.59
Wave 2	29.56	4.39	28.98	4.47	28.07	4.51	29.23	3.55

Note. W2 = Wave 2.